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The Use of Formative Instructional Practices to Improve Student Performance

Courtney L. St. John-Wacker

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THE USE OF FORMATIVE INSTRUCTIONAL PRACTICES TO
IMPROVE STUDENT PERFORMANCE

Dissertation

By

Courtney L. St. John-Wacker

Submitted to the faculty of
Columbus State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education
in Curriculum and Instruction
(Specialization in Assessment)

Columbus State University
Columbus, GA

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APPROVAL OF DISSERTATION PROSPECTUS

The Use of Formative Instructional Practices to Improve Student Performance

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ABSTRACT

This study explores teacher and school leadership perceptions on the use of Formative Instructional Practices (FIP) in classroom settings located in a large urban school district. Research indicates that using formative assessment can increase student achievement; however, professional learning of such practices is needed (Frey & Fisher, 2013; Harrison, O'Hara & McNamara, 2015; Wiliam, Lee, Harrison & Black, 2004). Research questions developed for this study included one main question and three secondary questions. The main question explored the participant's perceptions of FIP implementation while the secondary questions focused on the development of student motivation and classroom assessments for students. Additionally, factors impacting teachers' motivation to change classroom instructional practices were discussed. Study participants conducted and participated in a professional learning series using five on-line modules explaining the use of formative instructional practices. A basic interpretive qualitative research design used focus groups and interviews to reveal seven themes from participant's perceptions. These themes included the effects on student motivation, differentiation considerations for students, leader and teacher expectations, cultural aspects for instruction, the struggle between current knowledge and desired outcomes, the use of time, and use of data.

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CHAPTER I

INTRODUCTION

As students enter their classrooms in the fall of a new school year, parents, teachers, school leadership team members, and yes, even students ponder questions that center on the topic of achievement. For example, students wonder what they will be learning during the school year. Teachers wonder how they will present the myriad of instructional materials needed for a full year of learning. Parents wonder how much their student will grow in their knowledge. School leadership teams wonder if their planning efforts will produce the desired accountability results. One instructional framework that could assist in answering all these questions is the incorporation of formative instructional practices into classroom routines. The following dissertation will provide the importance, context, rationale, and foundation for this research study.

Classroom Assessment Conversation

Every conversation has a point of reference to begin the dialogue. In order to initiate the classroom assessment conversation, the theoretical lens should be explained. For this particular conversation, cognitive learning theory will be the basis. The principle of cognitive learning theory states that it is a process used by students as they compartmentalize information in their brains while they are learning (Ertmer & Newby, 2013). In addition, cognitive learning theory focuses on *what* students know and *how* they know it.

Adding to the dialogue, accountability measures mandated by legislative initiatives like No Child Left Behind (2001), Race to the Top (2011), and Every Student Succeeds ACT (2015) strengthened the curriculum ideology of Social Efficiency to a new level of importance. The Social Efficiency curriculum ideology incorporates an emphasis on evaluation of students, teachers, and curriculum standards in order to provide an efficient curriculum which can easily measure changes in student learning behavior, thus producing a skilled workforce (Schiro, 2013). Therefore, if a Social Efficiency type of curriculum is the norm in schools and provides a way to track what students know, how they know information is the next part of the discussion.

The examinations of how assessment was being used in the United States started the initial comparisons between assessments *of* learning and assessments *for* learning (Stiggins, 2006; Stiggins, Arter, Chappius, & Chappuis, 2007; Stiggins & Chappuis, 2006). Assessments of learning are administered after instruction has taken place, and the data from the assessments is used to rank students and determine instructional practices for the next set of students; therefore, little is done to correct any student misunderstandings. Assessments for learning are administered during instruction allowing for the information from the assessment to be used to modify instructional practices and increase student learning.

Thus, assessments for learning were referenced as a powerful tool to increase student achievement; however, the exact components of assessment for learning—or formative classroom assessments—were unclear until several prominent researchers provided direction (Popham, 2008; Stiggins, Arter, Chappuis & Chappuis, 2007; Wiliam, 2011). The formative instructional process stresses that teachers understand the

instructional standards and requires them to deconstruct the standard into manageable and understandable learning targets. Lessons are developed incorporating questioning techniques and are provided through a coaching model. Checks for student understanding are used and information from the checks help to modify teaching practices. Finally, feedback is provided to students in order to help them guide their own learning process. Students then are able to establish their personal learning goals, track their progress through self-assessments, and understand what is needed in order to meet their learning goals. An examination of the literature reveals that benefits for incorporating formative instructional practices into classroom routines include increased student achievement and motivation, additional time for teachers due to their efficient processes, and achievement of annual school goals (Stiggins, 2002).

There are opponents to the formative instructional practice methodology of instruction, and their criticisms stem from the over generalization of small-size research results to major areas of the educational system and the amount of time needed to fully understand the components of the practice (Sadler, 1998; Torrance, 1993). One topic that is consistent among all researchers is the need to have professional learning available for teachers in order to learn assessment practices and components of formative instructional practices (Popham, 2006; Popham, 2008; Stiggins, Arter, Chappuis & Chappuis, 2007; Wiliam, 2011; Wiliam, Lee, Harrison, & Black, 2004)

Influencing Student Motivation

One thing educators wish to achieve is the ability to instill the need for students to become life-long learners. Goal setting and student motivation have major roles to

play in fulfilling this wish. Goal setting is an imperative part of the classroom experience. Therefore, in order to assist students in their personal goal setting, educators need to understand how students are motivated, which will enable them to meet their goals (McMillan & Hearn, 2008). Through a variety of different research endeavors, students develop a greater sense of motivation when they are able to work toward mastery type goals rather than performance goals (Cauley & McMillian, 2010; Stefanou & Parkes, 2003). In addition, student performance is achieved at higher levels when the internal motivation is intrinsic rather than extrinsic (Kusurkar, Croiset, & Ten Cate, 2001). Therefore, according to Cauley and McMillan (2010) and McMillan and Hearn (2008), educators can promote the development of student motivation through the following processes:

1. Educators should provide clear and understandable learning targets, which is the first step in implementing formative assessment practices.
2. Teachers should explain the evaluation of the learning targets.
3. With teacher assistance, students should learn how to set obtainable goals.
4. Educators should provide frequent, early feedback regarding the learning process—another critical step in the formative assessment procedure.
5. While providing instruction using a variety of methods and activities, teachers should allow students to make choices in their learning.

Teacher Resistance to Instructional Changes

If formative assessment practices indeed deliver higher student achievement and increased student motivation, then why are teachers resistant to employing an

instructional strategy that is deemed to be so successful? In order to help answer this question, exploration in teacher resistance to instructional changes is necessary. Maurer (1996) described that the presence of resistance is a natural phenomenon in life as it keeps individuals from harm. Hence, Maurer (1996) and Fullen (2001) reminded those initiating instructional change that resistance should be embraced in order to understand the personal fears used to oppose transformation. Knight (2009) provided suggestions, which could be used when taking resistance to change into consideration as professional development initiatives are created. These included:

- Explaining and sharing the benefits of the new change
- Providing tools and materials for easy change implementation
- Incorporating experienced staff to lead the implementations efforts
- Treating all participants with respect for the knowledge they can share
- Incorporating participants strengths into the implementation plan

Linkon (2005) and Liu and Carless (2006) then suggested the following possible topics, which could become professional learning endeavors during the implementation of formative assessment.

- Learning different ways to gather instructional information
- Learning how to design valid and reliable assessments
- Learning how to incorporate student feedback into instructional practice

Formative Instructional Practices

There have been several different approaches used to help increase student achievement in order to meet societal accountability demands. These approaches have

included: class size reduction, student engagement focus, curriculum reviews, charter school options, textbook revisions, incorporation of instructional technology, and application of business management procedures—none of which have produced great instructional improvements (Wiliam, 2011). Therefore, a call to increase a teacher's capacity and quality by incorporating formative instructional practices as an instructional strategy is recommended (Chappuis, 2009; Popham, 2008; Wiliam, 2011). Though there are differing definitions and processes labeled as formative assessment practices, a common theme in the literature is that assessment could be used as a learning tool in order to maximize student achievement and increase student motivation (Black & Wiliam, 1998; Brookhart & Durkin, 2003; Chappuis, 2009; Popham, 2008; Wiliam, 2011). Researchers then have offered many different examples and suggestions for gathering learning evidence from students and instructional methods for teachers (Chappuis, 2009; Popham, 2008; Wiliam, 2011). These examples and suggestions are labeled as Formative Instructional Practices and will be explained further in subsequent chapters of this dissertation.

Purpose of the Study

Student performance on language arts local district, in Georgia with an overall enrollment of over 178,000 students, assessments is indicating that students are not mastering the district's curriculum. Current student performance on these assessments ranges from 47% to 50% as an average grade after instruction has taken place, and the assessments' results become 20% of a student's overall grade for the course. What is unknown is how teachers provide instruction to students on language arts content beyond

what is provided by the district office—instructional text, instructional calendar, and analyzing the standards document. Could incorporating Formative Instructional Practices (FIP) based instruction benefit teacher instruction of the curriculum? Could FIP-based instruction benefit teacher’s creation of their own classroom assessments? Could instructional and assessment changes benefit student performance on district assessments? These are the questions that this study addresses. Results for the study might translate to added instructional benefits across the district.

Statement of the Problem

Researchers believe that the formative assessment process can improve student achievement and increase student motivation toward learning. What is unknown is if Formative Instructional Practices can increase student achievement in language arts classes. Therefore, this study will specifically address the relationship between teacher’s perceptions of Formative Instructional Practice implementation and student achievement in language arts classes.

Research Question(s)

One main research question emerged from topics found in the literature—formative assessment and ways to improve student performance in the classroom. In addition, three secondary research questions involving student motivation, the development of classroom assessments, and teacher’s motivation to change their instructional practices were developed.

- What are teachers' and leaders' perceptions of Formative Instructional Practice implementation?
 - o How do teachers and leaders perceive that the use of Formative Instructional Practices contributes to the development of student motivation?
 - o How is the implementation of Formative Instructional Practices assisting teachers in the development of classroom assessments for students?
 - o What factors impact teachers' motivation to change their classroom instructional practices?

Conceptual Framework

The following graphic (see Figure 1) provides a visual representation of the study's topic and variables associated with the research questions.

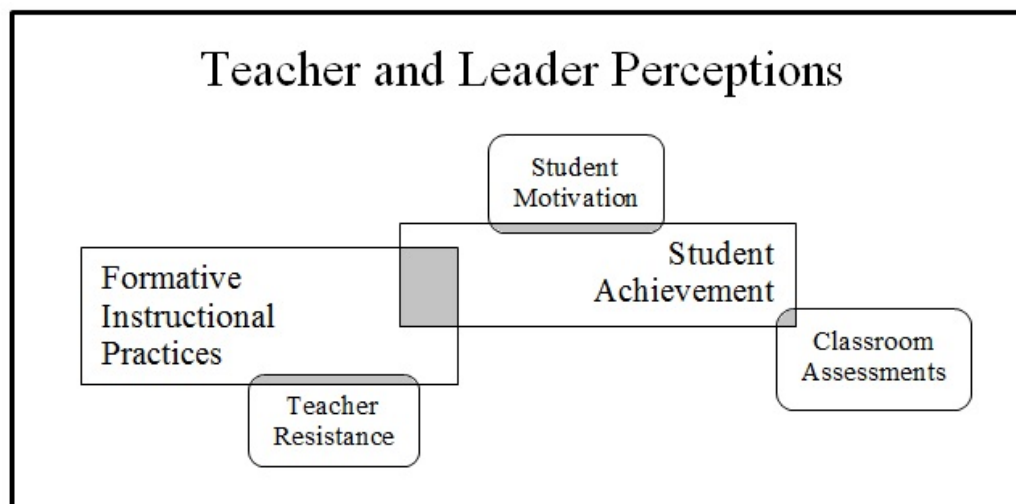


Figure 1: Conceptual Framework diagram

The majority of the data for this study will be obtained through focus groups and semi-structured interviews both focusing on teacher's perceptions of Formative Instructional Practices and how these practices relate to student achievement. In addition, focus group and interview questions will also probe the relationship between classroom assessments and student achievement as well as the relationship between student motivation and student achievement. Finally, the connection between Formative Instructional Practices and teacher's resistance to changing instructional practices will be examined through focus group and interview questions. Shaded intersections in the graphic represent the possible relationships between the different variables in the study. Because the size of the shaded areas varies, the shaded areas are not to scale to represent the actual relationship, as the relationship is unknown at this time.

Importance of Study

During the past six years, the researcher has been employed as a Coordinator of Assessment in an urban school district in the southeastern United States of America—in particular, the State of Georgia. In this study, the district will be named Burkett Public Schools in order to provide anonymity for the actual school district. The primary responsibility of the researcher's position was to develop district assessments for the content area of language arts. The purpose of the assessments used in the district are to provide teachers and local school leadership teams with formative instructional information on student mastery of Burkett's standard curriculum as well as to provide grades for the reporting of student performance. Data reviews completed for the district assessments

indicated that items are performing in acceptable ranges signifying that the assessments are valid and should be measuring the intended purpose of the assessment. As the assessments have been administered in Burkett, the mean score for an average student has ranged from 50-55% on a 100-point scale. With a grade from these assessments weighing up to 20% of a student's overall grade, are Burkett's students performing adequately on these assessments?

Analysis of item performance data from field testing and operational administrations (p-value and pt-bis) identifies that assessment items have been performing within acceptable levels; therefore, the assessments are valid and reliable. During the past five years, teachers from around the district have reviewed the assessment items for correct answers and confirmed the alignment to the curriculum and instructional calendars. However, when an analysis of the Depth of Knowledge (DOK) for the items on the assessment was completed, the overall rigor of the assessment is predominantly skill/application and strategic thinking rather than simple recall of facts and definitions. Is the level of instruction provided to students not matching the level of rigor of the assessment? For example, teachers may be providing instruction at high levels of Bloom's taxonomy but assessing students with items of low depth of knowledge; therefore, students may not have the mental stamina to complete a district assessment.

The Georgia Department of Education provides instruction for teachers on deconstructing standards, identifying evidence of student learning, providing effective feedback, and using assessment results to inform instruction—in the Formative Instructional Practice (FIP) modules. Potential benefits of this professional learning include the opportunity to change instruction in classrooms around the state. If teachers have a better understanding of what the standards require for instruction, then there is a

greater possibility that the level of instruction will increase—translating to additional rigor on assessment items for classroom assessments.

From these past experiences, three assumptions have been established: 1) teachers are unable to reach the required level of instruction designated in the curriculum; 2) classroom assessments lack the level of rigor needed to effectively assess standard mastery; and 3) teachers are frustrated with student performance on district assessments, and therefore, “blame” the assessment development. Through focus group and interview conversations with teachers and leaders involved in professional learning of FIP-based instructional practices, the researcher hopes to learn how FIP strategies are implemented in the district, and consequently, what the potential might be for improved student performance.

Finally, it is important to discuss why completing this study is essential. In the busy world of education, time is one of the most important commodities, and no one can afford to waste it. As assessments are administered, it is important to gain the best possible information from the assessment in order to guide future instruction and lesson planning. If students are unable to perform well on district assessments due to lack of experience with rigorous assessment items, then the assessment is unable to provide accurate instructional information to teachers, and time is being wasted in administering these assessments—maybe there is little instructional value in the assessment administration. While this study cannot examine the entire spectrum of instructional variables involved in increasing a student’s performance on district assessments, the information learned from the focus groups and semi-structured interviews could begin a

deeper conversation concerning the advantage and disadvantages of implementing Formative Instructional Practices in district classrooms.

Benefits for this study include:

- Results of this study could assist district and local school administration teams in perceived effective practices for the implementation of FIP professional learning.
- Results of this study could inform teachers of perceived benefits in student achievements from the implementation of FIP strategies as well as continuing the current implementation of FIP strategies.
- Results of this study could provide students with additional opportunities to become responsible for their own learning as additional teachers decide to implement FIP strategies.

Procedures

This study took place in an urban school district—Burkett Public Schools—primarily with elementary and high schools. Purposeful selection of these schools was made using two different factors: completion of participation in the districts cohort program and current implementation of formative instructional practices. Over the past six years, schools in Burkett Public Schools have had members of their leadership teams voluntarily participate in the cohort model completing a modular course about Formative Instructional Practices (FIP). These same schools developed an implementation plan stating how their schools would implement practices learning

through the cohort. In addition, The Battelle for Kids management website tool was used to identify schools providing the FIP module professional learning to staff members.

Overall, the study incorporated a qualitative approach by collecting data through three different methods: focus groups, semi-structured interviews, and document analysis of classroom assessments. Burkett has large schools in the district; therefore, there was the potential of having a pool of teachers and leaders for focus group and interview volunteers. Letters were sent to the identified elementary and high school principals asking first for permission to conduct the study and second for research study volunteers. Focus groups of teachers and leadership personnel provided additional information to support the district's perceptions on the use of formative instructional practices and how these practices help to improve student performance in the classroom.

Focus groups were conducted after school hours in a central location in the district providing a neutral environment, which is an important consideration for effective focus groups (Kleiber, 2014). Regarding the number of focus groups needed in the study, Kleiber (2014) recommends between three and five groups of seven to twelve participants to obtain adequate information; therefore, two teacher focus groups and two leader focus groups were scheduled. To attract the seven to twelve focus group participants, a light dinner and snacks were provided. During the 60-90 minute focus group discussions, five to six general questions were used and developed from the research questions (Kleiber, 2014). In addition, the researcher served as the facilitator for the group to provide an atmosphere allowing each participant an opportunity to share their opinion. An assistant facilitator was available to assist with technical considerations (e.g., insuring that recording equipment was functioning properly) (Kleiber, 2014).

The second means of collecting study data took place using semi-structured interviews from one teacher and one leader participant (Maxwell, 2013). The focus of the interviews was to expand on topics and responses presented during the focus group. To attract the teacher participants, the researcher announced a chance to win a \$100 gift card. During the 45-60 minute interview, seven general questions were used and developed from the research questions (Merriam, 2009).

Conducting the interviews after school hours in a central location in the district provided a neutral environment. This setting provided the necessary quiet environment to conduct a semi-structured conversation (Teddlie & Tashakkori, 2009). During the 60-90 minute interview, five to six general questions were used and developed from the research questions. It should be noted that the interview questions changed due to participants' replies—keeping true to a semi-structured format.

The final data source for this study was from document analysis of classroom assessments. Classroom assessments were used to analyze the level of rigor for each item in order to help identify if classroom assessments have changed due to information learned through the FIP modules. Teachers involved in FIP professional learning submitted their classroom assessments—predefined formats were not necessary. Analysis of classroom assessments involved the determination of item level rigor according to Webb's Depth of Knowledge (DOK). In order to protect participant confidentiality, all submitted documents were coded with pseudo names. Teacher participants submitted documents via district courier service. If courier service was disrupted, document submission occurred via preaddressed and posted US mail envelopes.

Focus groups and interviews were transcribed by a third party vendor while classroom assessment item DOK values were assigned by the researcher and authenticated by a former member from the district Assessment Office. Coding of both the focus groups and interviews was completed by first identifying the data chunks through the information (e.g., descriptive, process, emotion, DOK) and assigning appropriate codes. A second review of the initial codes was completed to identify any patterns between interview participants; hence, developing themes for the data elements (Merriam, 2009; Miles, Huberman, & Saldaña, 2014).

When considering time constraints for this proposed study, the following time line (see Table 1) was implemented based on instructional considerations for the middle of the school year. While the beginning of the year would have been the best time to conduct this study, this timeline was also effective.

Table 1 – Proposed Study Timeline

Time line	Action
Fall, 2016	• Complete IRB for both Columbus State and local school district • Inform principals and leadership teams involved in FIP cohort of research study ○ Ask for volunteers at the elementary and high school level • Send study participant letter requesting all local school leadership personnel and language arts teachers at the elementary and high school level to participate in study ○ Letter outlines study requirements including: focus groups and interview commitments along with classroom assessment submission ○ Focus group participants receive food (e.g., snacks and drinks) for participation in the focus group portion of the study ○ Interview participants have an opportunity to win a gift card for participation in the interview portion of the study

- | | |
|----------------|--|
| February, 2017 | <ul style="list-style-type: none"> • Teachers and leaders participate in focus groups <ul style="list-style-type: none"> ○ Send audio for transcription after each focus group • Teachers and leaders participate in interviews <ul style="list-style-type: none"> ○ Send audio for transcription after each interview • Begin to gather classroom assessments from teacher study participants <ul style="list-style-type: none"> ○ Assign DOK value to each item on the assessment • Begin qualitative analysis of data |
| March, 2017 | <ul style="list-style-type: none"> • Conclude any remaining focus groups • Conclude any remaining teacher interviews and collection of classroom assessments • Complete qualitative analysis of data |
-

When considering resources for this study, volunteer interview participants were given a chance to win a \$100 gift card through a drawing to compensate for their time and effort. Lastly, resources to pay for prepaid postage and envelopes, should they be needed, was considered. Resources to provide the gift card drawing, as well as payment for focus group/interview transcriptions, were provided by the researcher's personal account.

Data collection considerations included the transcription of two interviews as well as transcription of four focus group discussions. In order to protect participant confidentiality, all transcribed interviews and focus group discussions were coded with pseudo names. All questions were formulated from the research questions. The district student information system assisted in the retrieval of class and student demographic information, as needed. Finally, communication with participants occurred through the district email system; therefore, email addresses and school names were known.

Burkett Public Schools has been a Broad Prize finalist and recipient, has some of the highest test scores in the state, and attracts families to the area based on the school system's reputation. In this type of environment, certain behaviors and actions are expected and required. Gathering honest opinions is important; therefore, protecting the reputations

of teacher participants, and school principals is crucial. Care and scrutiny in fine tuning focus group and interview questions was needed to avoid any uncomfortable situations.

Political considerations included the recognition that local school principals have the power in the study's setting—request for study participants could not occur without principal approval. Principals wanted to be reassured that time will not be taken away from the instruction of students. In addition, principals wanted to ensure that there was a minimal disturbance of their teacher's time regarding the submission of additional documentation. A proper explanation of the goals of this research study to principals was essential so that there was a vested interest in the study results. Even when answering principal's questions, several principals did not provide their consent to move forward with the study in their school.

Additional study integrity considerations included that all teacher and leadership study participants will be unknown until identified through the Battelle for Kids professional learning maintenance tool. To minimize the potential threat to the validity of knowing the teacher or leadership participants, the researcher would only accept volunteer participants for which no prior work experience has occurred. At times, it seems as if teachers are intimidated by a district office staff member; therefore, the researcher did not necessarily divulge the researcher's position title until later in the study—or if at all. In addition, it would have been unfair to ask close friends who may qualify to be study participants to become a participant—this may introduce unwanted biases into the study.

During the study, the researcher's footprint was a small one as a *get in* and then *get out* mentality was established. During the focus group and interview processes, a

rapport was developed in order to allow participants to provide honest answers to interview questions. This rapport was vital in the collection of classroom assessments for the study. Finally, a practice interview stressed the importance of thanking the participants for their contributions to the study's results.

Limitations/Delimitations

The following bullet points are limitation considerations for this study.

- Noisy interview locations
- Equipment failure occurring
- Interviews being cut short for a variety of reasons (e.g., teacher had to leave quickly for a sick child)
- Classroom assessments not submitted from participants
- Participants unwilling to participate in focus groups
- Time needed to conduct effective focus groups
- Findings from 8-10 teacher interviews not generalizable to a larger population
- The art of teaching contains many uncontrollable variables
- Student achievement contains many uncontrollable variables

The following bullet points are delimitation considerations for this study.

- Takes into account and expands upon the Social Efficiency curriculum ideology

- Only focuses on elementary and high school teachers as this would provide district offices with additional insight on the implementation of Formative Instructional Practices (FIP) for an obstinate population
- Only focuses on the language arts curriculum as this is an area of weakness for the district when it comes to implementing new instructional practices
- A natural delimitation of a qualitative study is inherent in the categories determined while analyzing focus group and interview transcripts and documents.
- The study focused on schools participating in FIP implementation for over one year, which is important as it gives teachers additional time to practice and refine newly-learned instructional practices.

Researcher's Statement

In a qualitative study, it is important to know about the researcher's background and what they bring to their studies (Bloomberg & Volpe, 2016). This researcher has been an educator for 28 years working in Burkett Public Schools. I have held various positions in the district: classroom teaching at the middle school level; leadership positions (served as an assistant principal at the elementary level and a district central office coordinator of assessment); and currently serve as a coordinator of Federal and Special programs for the district. These various positions have molded my pride and loyalty that I feel for the district I serve.

I truly believe that there are two types of people working in schools: one that teaches and one that supports teachers. As a district, we have been fortunate to have uninterrupted district leadership—one of the longest-standing superintendents in the nation—which has provided the district with a consistent, continuous message and steady work toward instructional perfection. Burkett Public Schools has a lot to be proud of, and even with all the accolades earned over the years, we still strive to become better. With so much to be proud of, what is keeping our students from performing well on district assessments? Through my study, I hope to provide results that can help support teachers, and therefore, provide an avenue to help students in their learning.

As a former Coordinator of Assessment, knowledge of assessment development and administrative procedures provides credibility to assure valid and reliable test results. Over the course of six years, I developed language arts district assessments, which led me to choose the research topic to this one curriculum area. I have studied the standards associated with the language arts curriculum, facilitated numerous teacher sessions to review assessments, evaluated field test item performance data, and consulted with the district director of language arts during every step of test development, which provided me with a set of skills used to make a valid and reliable test for students in our district.

While understanding test development procedures, what really is unknown is why students are not performing well on these assessments. In actuality, students are also not performing well on district assessments in the areas of mathematics, science, and social studies. So, the question that has intrigued me has been what could be the missing link in our instructional practices? Our district performed well on the now-retired standardized assessment; however, after two years, our district has not reached that level of

performance again. Could the increased rigor on the new standardized assessment be a factor for our students which could be overcome if students had an opportunity to practice assessment rigor in all aspects of their learning? My goal is to add to the body of knowledge on this topic through discussions with teachers and school leaders learning about their perceptions of using Formative Instructional Practice as a way to increase student achievement and motivate students to learn.

Definition of Terms

ANOVA Analysis of variances – a statistical analysis procedure used to determine if there is a statistically significant difference in means between an independent variable and several dependent variables (Lomax & Hahs-Vaughn, 2012).

Battelle for Kids - the name of the company who developed the FIP module content used in professional learning courses (Georgia Department of Education, 2016).

DOK Norman Webb’s Depth of Knowledge – a four point scale used to determine the level of mental complexity that an assessment item is requiring of a student (Webb, 2002).

ETS Educational Testing Service – an organization that strives to provide innovative and meaningful measurement solutions to improve teaching and learning (Educational Testing Service, 2003).

FIP Formative Instructional Practices – A professional learning plan offering teacher’s content for learning about deconstructing standards, developing

assessments, providing student feedback, and guiding student goal setting (Georgia Department of Education, 2016).

Formative Assessment – although there is no single definition for formative assessment, the definition that will be used in this study is a combination from Popham (2008), and Chappuis (2009), and Wiliam (2011) which includes an informal and formal planned process to gather instructional evidence to determine the status of student achievement toward a curriculum aim and adjust the instructional setting.

GCSE General Certificate of Secondary Education – the national exam taken at the end of the 11th grade year in Britain, Wales, and Northern Ireland (Department for Education - UK, 2016).

LTM Long-term memory (Grider, 1993).

NCLB No Child Left Behind Act – the 2001 federal law that reauthorized the 1965 Elementary and Secondary Education Act (Pub. L. No. 107-110, 2001).

PISA Program of International Student Assessment – an international assessment used to measure reading, mathematics, and science literacy obtainment in 15-year old students (Program of International Student Assessment, 2016).

STM Short-term memory (Grider, 1993).

Summary

Within this chapter, discussions included how classroom assessments can be used to assist in the assessment *for* learning and how formative and classroom assessments can influence student motivation. While these practices have benefits cited by research, teachers are still resistant in the implementation of Formative Instructional Practices possibly due to time restraints or lack of knowledge for proper implementation. Therefore, this study will answer the question: to what extent do teachers perceive that Formative Instructional Practice (FIP) implementation increases student achievement in language arts classes? In doing so, maybe FIP will be identified as the missing link to improving the districts instructional practices.

Using a qualitative approach, data collected from focus groups, semi-structured interviews and document analysis of classroom assessments were gathered gaining valuable information from elementary and high school leaders and language arts teachers from an urban school district in the southeast. This chapter provides details of study design as well as the study's delimitations/limitations and the qualifications and experiences of the researcher. In conclusion, the potential of this study to benefit the students, teachers, and school leaders of this district are numerous. Results could be: used to help guide further implementation efforts of Formative Instructional Practices (FIP) in the district; used by school leaders to influence teachers to attempt to use FIP strategies; and used by teachers to validate their use of FIP practices and continue increasing student achievement.

CHAPTER II

LITERATURE REVIEW

During the past three decades, public schools have been challenged to increase student achievement in order to meet accountability measures imposed by various government agencies. One possible way to achieve these types of goals is to incorporate formative instructional and assessment practices into classroom activities. Along with the theoretical lens and the evolutionary aspects in the use of formative assessment present in this chapter, the following narrative will also provide relevant conversation from assessment experts as well as research studies on four intersecting topics: using classroom assessments, influencing student motivation, affecting teacher resistance, and incorporating formative instructional practices.

Theoretical Lens/Philosophical Assumptions

In order to provide the best educational environment possible to students, learning how students learn is an important concept for an educator. While there are several theories to explain the learning process, cognitive learning theory is one which will be used as a theoretical lens for this study. Ertmer and Newby (2013) summarize cognitive learning theory as a process used by students while information is “received, organized, stored, and retrieved” by the brain (p. 51). Contrary to other learning theories, cognitive learning theory focuses on *what* students know and *how* they know it rather than what students *do* (Ertmer & Newby, 2013).

Additional key information involved with cognitive learning theory includes the coding and structure of information by students in order to form knowledge. Grider (1993) explained the schematic framework using three levels of knowledge transfer: short-term memory, working memory, and long-term memory. Grider further described short-term memory (STM) as a holding tank which could house seven chunks of information at one time, although using clustering techniques, students could hold more information if needed. Working memory was described as a holding tank similar to STM; however, it was specialized for mental operations like mathematical computations. Grider then clarified that information coded into long-term memory (LTM) entered into an unlimited holding tank and was “organized, meaningful, and permanent” (p. 3) in nature. This LTM holding tank can file learned information into two different categories: semantic or episodic. As students learn information from their environment (e.g., addresses, equations, directions), it is stored under the semantic category. If information is learned through an experience, then it is stored under the episodic category (Grider, 1993).

As students participate in the learning process, Greeno, Collins, and Resnick (2002) propose that learning can be strengthened and expanded through feedback to students about what they are learning. Feedback can provide students with important responses, which can then guide follow-up questions or opportunities to correct misgivings. In essence, formative assessment can be considered a form of feedback to students in which both students and teachers are made aware of the progression of learning by the student. As teachers are exposed to the formative instructional practices of deconstructing standards, formulating effective assessments, gathering evidence of

student learning, and providing effective feedback, the anticipation of improved student performance can be reviewed. Therefore, this study examined the effectiveness of formative instructional practice implementation as it relates to improved formative classroom assessments and opportunities to increase student achievement —validating *what* students know.

Evolution of Formative Instruction/Assessment

Federal mandates such as No Child Left Behind (2001) and Every Students Succeeds Act (2015) along with federal funding like Race to the Top (2011) have brought the American public education system into the media spotlight—a spotlight which has also brought increased scrutiny and strict accountability measures for classrooms across the nation. With fear of the United States falling behind other countries in preparing students, the accountability movement for schools holds the same core beliefs as the Social Efficiency curriculum ideology: provide an efficient curriculum which can easily measure changes in student learning behavior producing a skilled workforce for the United States (Schiro, 2013).

The concepts of teaching and learning are fairly straightforward in the Social Efficiency ideology. The act of teaching is described by Schiro (2013) by the teacher acting as “the manager of the condition of learning” (p. 92). This responsibility includes motivating the student through the process of facilitating lessons which includes differentiated learning allowing the student to be successful—“fitting the student to the curriculum” (Schiro, 2013, p. 93). Bobbitt (2004) identified with this principal by stating

that “the first task is the discovery of social deficiencies” (p. 15) as teachers often dissect the learning objectives in order to develop lessons that met the needs of the learner.

Completion of instructional activities provides an opportunity to analyze the evaluation component of this ideology. Evaluation is an essential element of the Social Efficiency ideology as Schiro (2013) described that evaluation is used to evaluate curriculum, students, and teachers in order to establish “accountability and standards” (p. 94). Schiro (2013) provided the following five reasons related to the importance of evaluation: identify student’s strengths and areas for improvement; verify reliability and validity of the evaluation; validate the curriculum sequence of progression; provide feedback to students; and certify the role of standards used in curriculum.

Assessment of Learning vs. Assessment for Learning

One lesson learned from mandates such as No Child Left Behind (2001) is the need to analyze summative assessment data in order to form instructional decisions for the upcoming school year (Popham, 2008). This practice has been commonly referred to assessment *of* learning since the data provided from summative assessment measures enabled educators to pinpoint students at-risk of failure as well as identifying curriculum gaps in need of intervention while there was still time to intervene (Stiggins & Chappuis, 2006). What is missing are strategies and techniques to help students think, grow, and find success in the classroom (William, 2011).

Stiggins and Chappuis (2006) reported that assessment *for* learning enables teachers to mold students into confident, life-longer learners when they are included in the learning process through three key elements: understanding the learning targets they

are responsible for mastering, participating in assessment administrations using items that provide decision making information, and contributing to conversations involving their learning through feedback. While educators have become accustomed to participating in assessment practices, knowledge of assessment principles are lacking (Stiggins & Chappuis, 2006). Therefore, Stiggins and Chappuis (2006) echoed the call for on-going professional learning of assessment principles to include the development of assessments using proper methods, rigorous and quality items, and careful administration planning. Once assessment data is available, then feedback conversations can be implemented and students can then be in control of their own learning.

Classroom Assessments

While the topics of formative assessment and classroom assessments are broad topics in reviewing research literature, the focus of this section will be a summary of 14 research papers and articles on these two subjects. In synthesizing the information gathered, similarities and differences between the information were noted. Hence, the following narrative will outline the research in terms of formative and classroom assessments to: clarify defined terms, provide a challenge to students with instructional processes, suggest pros and cons for classroom assessments, outline reasons for proper development of classroom assessments, offer an argument for a balance between summative and formative assessments, provide research based rational for changes, and discuss difficulties of implementation.

Clarifying Vocabulary

While the definition of summative assessment is clear, there is confusion among researchers of what defines formative assessment. Bennett (2011) stated three different definitions of formative assessment which include: a formative evaluation is to provide feedback which corrects at each stage of the teaching-learning process; a formative assessment refers to an instrument, as in a diagnostic test, an interim assessment, or an item bank from which teachers might create those tests; and a formative assessment is not a test but a process which produces a qualitative insight into student understanding and not necessarily a score for the gradebook. Black and Wiliam (1998) and Popham (2006) both define formative assessment as a reference to activities provided by teachers to students which results in data to be used as feedback to modify teaching and learning. Yet Stiggins, Arter, Chappuis, J. and Chappuis, S. (2007) explain formative assessment as assessments for learning which occur simultaneously with the learning process to diagnose student needs, plan out continuing steps in instruction, provide students with meaningful feedback, and help students experience control in the learning process. A blended definition using student results from activities provided by teachers to inform instruction coupled with providing meaningful feedback would be appropriate to use in a classroom environment.

Additional confusion occurs as educators apply a simplified version of these formative assessment definitions when results from *any* assessment are used to change instruction—regardless of the purpose for the assessment (Bennett, 2011). Black and Wiliam (1998) conceded that a universal definition for what is meant as formative assessment is needed. Most importantly, Popham (2006) states that if the results of an

assessment are not readily available, teachers will be unable to adjust instruction for students. Until a clear definition of formative assessment is developed, if routine assessments (e.g., quizzes, tests, and writing assignments) are used to guide student learning, then the quality of these routine assessments must be reviewed for rigor (Guskey, 2003).

Instructional Process Challenges

If assessment is to be used as a tool for learning, a review of the literature suggests evidence of learning should be gathered from a teacher based on three instructional processes which challenge students. These instructional processes were repeated in the literature and state: teachers and students should establish a desired learning goal, teachers and students should establish where they are in learning a concept, and teachers and students should know how to get to the desired learning goal (Bennett, 2011; Black & Wiliam, 1998; Stiggins, Arter, Chappuis, J. & Chappuis, S, 2007). The literature suggests these three instructional processes are the cornerstones of formative assessment and can be achieved by teaching students how to be “owners of their own learning” through the use of self-assessment (Bennett, 2011, p. 8).

When incorporating formative assessment into instructional practices, Black and Wiliam (1998) and Davies (2003) reported statistically and practically significant achievement gains if classroom assessments featured: results in accurate information, descriptions rather than evaluations when providing feedback to students, and involvement of students in the assessment process. Black and Wiliam (1998) also proposed that if teachers do not incorporate formative assessment into instructional

practices, students will often begin to see themselves as individuals who are unable to learn and therefore become disruptive in the classroom, begin to frequently miss class, and could eventually become alienated from society. Stiggins et al. (2007) and Bennett (2011) described student friendly learning methods such as Stars and Stairs, Three Stars and a Wish, and Traffic Lights as ways for students to gain valuable insight regarding strengths and weaknesses of their work. Each of these methods provides students with *glows* and *grows* statements of their work enabling them to identify how to make their work better. Black and Wiliam (1998) also suggested by stating that when students are involved with these self-assessment techniques, they are able to understand the main purpose of their learning and are able to understand what is needed to achieve in the classroom.

Pros and Cons of Classroom Assessments

When reviewing the literature, two researchers discussed the pros and cons of classroom assessments. Stiggins (2002) focused on the benefits of classroom assessments in relation to several different audiences. These included:

- Students become more confident in their own learning because they are able to watch themselves succeed;
- Teachers benefited in two ways—one as their students become more motivated to learn and two with the savings of time which results from their ability to create and use assessments more efficiently;
- Parents witness higher achievement and greater passion for learning from their children; and

- School leaders and policy makers observe the reality of achieving yearly accountability standards (p. 9).

Steadman (1998) provided pros and cons for both teachers and students. When incorporating classroom assessments, teachers stated that they had the ability to listen into students' inner thoughts from self-assessments as well as have the opportunity to engage in reflection with students. Teachers also noted that students improved their achievement in class along with becoming more involved in their learning. These same teachers provided cons to the incorporation of classroom assessments by stating that the amount of time required to effectively implement such a program was daunting in addition to the potential for negative feedback provided by students when asking them about specific classroom activities. When discussing the incorporation of classroom assessments with students, Steadman (1998) stated that students had an increased control and voice in the classroom as they were able to monitor their own progress throughout the class. Students also seemed to have benefited from improved teaching from their teachers. Finally, one disadvantage of incorporating classroom assessments seen by students was the requirements of becoming an active participant, even if they preferred to remain passive in the classroom.

Development of Classroom Assessments

Teachers trust the results gathered from assessments like quizzes, test, and writing assignments because teachers have control of the results and the analysis of results are easy to accomplish (Guskey, 2003). However, the literature reveals several flaws in using teacher made assessments to guide instruction. Stiggins et al. (2007) emphasized that

teacher created assessments must be of high quality and produce accurate results. Guskey (2003) explained that few teachers receive formal training in assessment design or analysis. The item quality of teacher assessments may be poor, low level, and fails to align to standards (Black & Wiliam, 1998; Guskey, 2003). Popham (2006, p. 87) stated that many classroom tests were “cruddy” because most assessments did not supply information needed for teachers to adjust instruction. Furthermore, poorly designed tests have the potential to provide inaccurate evidence of student achievement (Stiggins, 2002).

Consequently, ongoing professional development should be provided to teachers to become acquainted with assessment development techniques (Guskey, 2003). While encouraging teachers to consider the purpose of the assessment, Educational Testing Service (ETS) (2003) also encouraged teachers to keep learning goals in mind, consider various assessment strategies, and determine what constitutes as evidence that students reach learning goals while creating an assessment. Once a test is created, the instrument should be shared with other teachers for a critical review of the assessment’s intended purpose in addition to providing an opportunity for collaboration to strengthen item quality (Black & Wiliam, 1998). Subsequently, properly developed classroom assessments could help students learn more effectively and assist in the improvement of summative assessment scores (Popham, 2006).

Balancing Formative and Summative Assessments

Instructional information is provided to teachers in two different formats: summative—providing evidence after learning has occurred, generally as a once-a-year-assessment, and formative—providing evidence to help students learn more, generally

used throughout the school year (Bennett, 2011; Stiggins, 2002; Stiggins, Arter, Chappuis, J. & Chappuis, S, 2007). While parents, teachers, and school leaders find value in one format over the other, Stiggins (2002) and Bennett (2011) both make the argument that a balance of both formats is needed. Stiggins (2002, p. 5) urges educators to “make a much stronger investment in [formative] assessments” since there are many [summative] assessments in place while Bennett (2011, p. 7) urges educators to “design assessment systems” where summative assessments advance learning and formative assessments routinely add to the teacher’s overall judgment of student achievement. This balanced approach would provide day-to-day information needed for the classroom and provide evidence of achievement for school leaders and parents (Stiggins, 2002; Stiggins, Arter, Chappuis, J. & Chappuis, S, 2007).

Primary Research Studies

Relevant research studies for the topic of classroom assessment include four different studies. One such study was conducted by William, Lee, Harrison and Black (2004) to study how teachers incorporated formative assessment into classroom routines and identifies the effects on student achievement and their annual summative assessment. The study involved 24 science and mathematics teachers employed in six different high schools located in two different local education authorities in England. The study design consisted of providing the participants professional development in the principle of assessment and formative assessment practices and collecting teacher’s implementation plans for incorporating their new learning into classroom practice. The analysis was

conducted through mixed methods executing an ANOVA to analyze student performance from the General Certificate of Secondary Education (GCSE) exam and qualitative analysis of teacher interviews, action plans, and formative assessments. Findings from the study concluded that teachers improved in their use of formative assessment practices, which in turn improved student performance on the GCSE as compared to a control group.

Another study relating to the topic of classroom assessment was conducted by Yu and Li (2014) to identify if group-based self-assessment is or is not an effective assessment practice to increase reading comprehension over individual student review practices. The study involved 83 students enrolled in two different eighth grade English classes in northern China. The study design entailed the administration of four different summative assessments covering two units of study and then allowing the students to work collaboratively in groups of four or five completing review activities. Quantitative analysis of student performance scores on the exam re-test was completed in addition to student survey responses after completing the review activities. Findings from the study included significantly higher student performance on the re-test of students who participated in the group-based self-assessment as compared to the control group completing individual reviews. Students noted that they found value in group-based self-assessment and improved in their knowledge based on re-test results.

A third relevant study was a review of literature conducted by Afitska (2014), which analyzed research literature on formative teacher assessments, self-assessments, and peer-assessments as they related to the development of classroom assessments. Significant conclusions from this literature review include implementation issues regarding the amount of time it takes to incorporate formative assessments into regular

classroom practice. Moreover, teachers were still struggling with how to actually implement formative assessments into classroom practice and how to interpret the data gathered from these assessments. Finally, teachers had not participated in training to learn how to provide effective instructional feedback to students. One of the recommendations cited in this literature review expressed the need for additional studies incorporating formative assessments into a variety of content areas.

The final study relating to the topic of classroom assessment was conducted by Reed (2015) to determine how teachers were making data-based instructional decisions. The study involved 12 middle school teachers teaching reading and language arts in two different schools located on a southwestern area of the United States. The study design consisted of qualitative interviews and focus groups discussing the use of three different assessments: oral reading fluency from the Texas Middle School Fluency Assessment, benchmark assessments developed by the district office, and retelling of reading details from the state assessment. During the focus groups, six questions were asked of the participants and their responses were recorded and transcribed. All transcripts were reviewed and validated through the process of member checking. Findings from the study included observations that teachers were only using holistic data—data provided through summative state assessments—to identify instructional gaps in students’ knowledge and applying the identification of these gaps to current instructional lesson planning. Reed noted that if assessments were to guide student achievement efforts, then the assessments needed to provide accurate, meaningful information for teachers. In addition, a recommendation to provide long term professional development incorporating

assessment principles could help teachers understand how to develop data-driven instructional plans.

Implementation Difficulties

If this section has successfully provided arguments for implementing formative and classroom assessments in schools, one would wonder why educators and school leaders have not committed to and implemented these techniques into today's classroom. The research reviewed provided a few answers. One answer for a delayed implementation is the issue of time. Bennett (2011) reminded leaders that teachers need time to put knowledge, skills, and understanding into practice. Teachers also need time to reflect upon their experiences with these techniques and adjust their materials accordingly (Bennett, 2011). Finally Bennett (2011) concluded by stating that teachers who have been given time to use, reflect, adapt, and evaluate have a better understanding of how to incorporate formative assessments. Stiggins et al (2007) provided a different time challenge for formative assessment implementation. Formative assessment involves teachers providing descriptive feedback to students along with instructing students on how to complete self-assessments which take time to complete. While lack of time is a concern in today's classrooms, the promise of strong achievement gains in summative assessments and the assurance that students become motivated in the learning process gives reasons to at least try the implementation of classroom assessments in schools (Stiggins, Arter, Chappuis, J. and Chappuis, S., 2007).

Contradictory Opinions

While the balance of the literature reveals positive aspects of incorporating formative classroom assessments into regular classroom practice, the topic has critics. For instance, Torrance (1993) raised three specific issues regarding the use of formative assessment in the classroom. The first of these issues centers on the premise of navigating how the incorporation of formative classroom assessments would appear in the classroom. Even today, the specific elements for professional learning on the topic are not vetted by the experts in the field. The second issue concerns the use of small-scale research findings generalized to a variety of educational circumstances. Torrance (1993) reported that “much of the evidence is at the level of teacher perception and has been generated in the context of innovative projects” (p. 337). A third issue was an apprehension of how to avoid the over use of teacher’s formal assessments, which could then oppress the benefits that assessment experts advertise. If teachers incorporate elements of formative assessment practices incorrectly (e.g., repeating questions thereby inferring student wrong answers or emphasizing assessments as indications of student progress rather than emphasizing next steps in the learning process), individual student achievement could suffer.

Torrance (1993) also posed several important questions when considering the use of formative classroom assessments. These questions included: Are schools using the information gathered from assessments in conversations with students, parents, and planning teams? Do teachers think that formative classroom assessment practices support and enhance current learning theories? How can formative classroom assessment

practices be successful in a classroom and affect classroom culture? Additional studies in the area could bring valuable answers to these types of questions.

Sadler (1998) brought additional concerns to the argument for incorporating formative classroom assessments into the classroom. Regarding the use of feedback, Sadler (1998) suggested that the value of using feedback noted in other studies could actually be attributed to other instructional variables. Moreover, Sadler (1998) advised that any “substantial modification to the learning environment through changes to regular classroom practice involved turning the learning culture around” (p. 77)—which could take considerable amount of time. As Sadler (1998) provided a discussion about student’s advancement to the next grade level, he also conveyed a concern for an interruption in personal growth as the next teacher may not instruct in a similar fashion; therefore, momentum of change will be lost which could be serious for the most at-risk learners. Finally, Sadler (1998) continued to echo the need for teacher professional learning to address the specific details of incorporating formative classroom assessments into instructional practice.

Classroom Assessments Section Summary

In order to enhance the learning process, both teachers and students should have a full understanding of the learning goal, know where they currently are in relation to the goal, and know how to achieve the learning goal (Bennett, 2011; Black & Wiliam, 1998; Stiggins, Arter, Chappuis, J. & Chappuis, S, 2007). In addition, there is evidence that formative assessment is an important component of classroom instruction and as teachers continue to develop their own assessments, there will be a rise in student achievement

(Black & Wiliam, 1998). In contrast, there are also concerns and questions posed by researchers, which suggest that the benefits of incorporating formative classroom assessments are actually problematic rather than beneficial (Sadler, 1998, Torrance, 1993). Researchers urge educators to rethink the assessment process as a system of both summative and formative measures (Bennett, 2011; Stiggins, 2002; Stiggins, Arter, Chappuis, J. & Chappuis, S, 2007). Professional learning will assist teachers to change the way they use assessment results, as well as support teachers with improving the quality of their own classroom assessments (Guskey, 2003). Bennett (2011) summarized that formative assessment was a work-in-progress.

Classroom Assessments and Student Motivation

Educators strive for their students to become lifelong learners through their daily lessons and instructional practices. Through a summary of the literature on student motivation, this section provides key motivation definitions regarding student motivation and summarizes research based strategies used to enhance student motivation during instruction. Several research studies were reviewed and results from the studies will be shared. Finally, implications of the literature and connections to classroom assessment will be discussed. Information summarized in this segment will provide educators with strategies to assist with the goal of students becoming lifelong learners.

Clarifying Vocabulary

When reviewing the literature on motivation, the work of Maslow (1943) is the cornerstone of the body of work on motivation. Maslow developed a hierarchy of needs in his theory of human motivation which outlines five needs which move individuals to do things; these needs can be categorized as: physiological, safety, love, esteem, and self-actualization (Maslow, 1943). However, when relating the concept of motivation with classroom activities, McMillan and Hearn (2008) stated that the goal theory perspective is important. In particular, McMillan and Hearn (2008) discussed the difference between mastery goals, those goals where students concentrate on assigned tasks and are aware of what is needed to improve their own personal knowledge, understanding, and skill of a concept, and performance goals, those goals where students concentrate on the final outcomes (i.e., a final score or grade) and are aware of what is needed to improve the outcome rather than improving their overall understanding of the concept. Other researchers (Cauley & McMillan, 2010; Stefanou & Parkes, 2003) established the argument that to improve student motivation in the classroom, educators should provide learning experiences for students to focus on mastery goals rather than performance goals. This focus will assist educators as students learn to be proficient in their own self-assessment. McMillan and Hearn (2008) stated that focusing on mastery goals assists students with thinking, self-monitoring, and developing solutions to problems; as a result, students will tend to immerse themselves in their assigned tasks.

Another perspective of motivation focuses on intrinsic and extrinsic factors. Kusurkar, Croiset, and Ten Cate (2011, p. 978) described intrinsic motivation as the observation of a student when engaged in an activity “out of the genuine interest” and

showing “true self-determination” to complete the activity. These authors described extrinsic motivation as the observation of a student participating in an activity because of “particular benefit” or because of “pressure from others” around them. Kusurkar et al. (2011, p. 978) identified intrinsic to be the favorite type of motivation for students because it is associated with “deep learning, better performance, and student well-being.” These researchers stated that educators should fulfill the psychological student needs of autonomy, competence, and relatedness to foster intrinsic motivation. To fill the need of autonomy, they explained that educators provided students choices in the task they complete in the classroom. To fill the need of competence, they suggested that educators should provide activities and materials at the cognitive level for the student so as to foster the feeling that the student is capable of learning the desired concepts. Finally, to fill the need of relatedness, they proposed that educators should provide a classroom environment free from bias where students feel a sense of belonging and part of the learning team.

Cauley and McMillan (2010) connected the concepts of intrinsic and extrinsic motivations with goal theory by explaining that performance goal orientated students display a concern with how their abilities compare and are judged by others, and are therefore extrinsically motivated when completing classroom activities. They explained that mastery goal oriented students display characteristics of mastering new skills, understanding and improving in the learning of new concepts, and willingness to take on new challenges. When students are mastery goal oriented, they develop deeper cognitive strategies allowing them to become intrinsically motivated in the classroom.

Researchers (Cauley & McMillan, 2010, p. 3; McMillan & Hearn, 2008, p. 45) have provided a three step approach to fostering intrinsically motivated mastery goal oriented students. These steps are:

1. Provide clear and understandable learning goals/targets to students. This step allows students to know and understand what is to be learned as well as providing students with an opportunity to assist in the development of how the learning will be assessed (p. 3).
2. Clearly explain the evaluation criteria of the learning goals/targets to students. This step allows students to be informed of learning expectations as well as providing students with important feedback and opportunities to self-assess (p. 45).
3. Help students set obtainable goals for improvement. This step allows students to gain a sense of ownership in their learning as well as provides confidence for students that they can be successful with their learning (p. 3).

Strategies to Enhance Student Motivation in the Classroom

While there is not a single strategy which can guarantee an increase in student motivation, Davis (1999) and Callahan (2012) provided several strategies which have been used and have successfully encouraged students to become self-motivated. These strategies include:

- Provide frequent, early, and positive feedback to students, which builds confidence that they will do well in the class/course (p. 1).

- Offer opportunities for student success by providing classroom activities conducive to their learning ability. Differentiated lesson plans are suitable to accomplishing this strategy (p. 1).
- Assist students to find personal meaning and value in the class/course content by making students active participants in learning (p. 1).
- Create a classroom atmosphere which is open, positive, and favorable to learning (p. 1).
- Assist student's perceptions that he/she are valuable members of a learning team (p. 1).
- Provide instruction using a variety of teaching methods. Role playing, debates, brainstorming, discussions, demonstrations, presentations, and group work are all effective methods to providing instruction to students (p. 2).
- Allow students to make choices in their learning, which will develop a sense of empowerment and autonomy (p. 2).
- Behave in a manner which is enthusiastic, noncompetitive, and incorporates high expectations. Above all, educators should have passion for the subjects he/she teaches (p. 3).

Primary Research Studies

As educators transition from traditional forms of assessment to formative assessment approaches for evaluation of students, two studies were conducted to examine the correlation between student motivation and different forms of classroom assessments

(e.g., pen and paper assessments, performance “task oriented” assessments). Stefanou and Parks (2003) explored the claim that performance assessments fostered more positive motivational orientation for students than multiple choice assessments. They also suggested that performance assessments would provide better formative instructional information rather than information acquired through multiple choice assessments. The study consisted of 79 students enrolled in 5th grade science classes taught by one teacher in a rural, northeastern U.S. elementary school during the last half of the school year. During the study, three units of instruction became the focus with assessments developed for each unit. The assessments were counter balanced with each unit and each class took each type of assessment per unit during the study. The assessment development format was either paper and pencil, laboratory experiment, or a performance assessment. After a class took a unit assessment, the students were asked to complete a questionnaire about their attitudes toward science, goals, and cognitive engagement during the actual assessment administration. As a mixed-method study, interview sessions were also conducted on the same day of the assessment administration.

Qualitative analysis results from 57 eligible participants revealed that the students were concerned with their grades, and they favored paper and pencil assessments for several reasons: students were most comfortable with the assessment format; students knew how to prepare for the assessment and therefore could make a better grade; students were comfortable taking a paper and pencil assessment; and students felt as if they knew what their teacher wanted from them. During interview sessions, Stefanou and Parks (2003) asked students their perceptions if grades were removed from the event. In these conversations, students had a more favorable opinion of performance assessments as

these assessments provided a positive intellectual challenge. Concluding remarks summarized the study by stating intellectual challenge for students is acceptable as long as their academic performance is not affected. When students perceive assessments to be high stakes, then motivation is aligned with performance goal theory rather than mastery goal theory because the grade becomes important rather than the learned content.

Brookhart and Durkin (2003) examined student perceptions of a given task in a high school social studies course including the effort, goal orientation, and cognitive strategies used to complete the task. The study consisted of 81 students enrolled in three different social studies courses taught by a single teacher in a large urban high school. Surveys were conducted before and after 12 designated assessment events—four different assessments per course. Assessment formats consisted of paper and pencil, performance assessments (group and individual projects), and a written essay. Surveys were developed using a five-point Likert-type scale. Interviews were also completed with two students—one low achiever and one high achiever—selected by the course instructor. The interview questions followed the same concepts as the survey, but the face-to-face format allowed the researchers to ask students reasons for their survey responses.

Results of the study revealed that students wanted to learn for their own sake, wanted to show what they learned, and wanted to help others learn or learn from others rather than just trying to get a good grade in the course. When Brookhart and Durkin (2003) examined survey data connected with a particular assessment format, they found that when the content of an assessment matched the interest of the students, students wanted to learn more about the concept. Overall, students at the high school level did not care what other students thought about their grade in the course. The researchers

concluded the study with the following thoughts regarding assessment design (Brookhart & Durkin, 2003, p. 52):

- Design assessments that allow students to easily feel ownership of the task.
- Design assessments that are clearly important and worth working for.
- Design assessments that students clearly see they can accomplish with reasonable effort.

When teachers incorporate these elements into their classroom assessments, student motivation and the quality of instructional products improves and ultimately breeds student success (Stiggins, 2006).

Another relevant study was a review of literature conducted by Clark (2012), which analyzed research literature on implementing formative assessments and the degree in which formative assessments are actually used in the classroom. Significant conclusions from this literature review include notations of teachers identifying the relevance for using formative assessments in 2001 to increase student achievement and build student motivation, but had little knowledge of how to implement the strategy into regular classroom practice. Moving forward to 2010, teachers were finally incorporating portions of the formative assessment process, but not with any consistency. Teachers were requesting additional teacher training and support from their leadership teams, parents, and students. One of the recommendations from this literature review was to continue the conversation with teachers that students needed to: know details regarding the standards they were mastering, understand that assessments can ignite internal motivation, take responsibility for their own learning, and receive feedback in order to improve their learning.

Lastly, another study relating to the topic of student motivation was conducted by Harrison, O'Hara and McNamara (2015) to determine how self- and peer assessment can assist in the development of students' attitudes and behavior in becoming self-reliant and life-long learners. The action research study involved 11 middle school teachers and 523 students in Ireland. The study produced data from informal meetings, in-depth interviews, and observations with teachers, along with notations in research journals. Researchers determined that benefits of exposing young students to the use of self- and peer-assessments were that students: had a greater chance to develop self-reliance skills, could become independent and critical thinkers, and were able to judge their own performance without becoming judgmental. Findings from the study included observations that students developed skills to become better communicators, critical thinkers, and collaborative team members thereby increasing their personnel effectiveness as classroom students. Harrison, O'Hara, and McNamara (2015) noted that self- and peer-assessment strategies could be used by any age learner and within any content area.

Classroom Assessments and Student Motivation Section Summary

If educators want to boost the ability of students to become life-long learners, fostering student's intrinsic motivation through mastery goals is essential. Educators will enhance student motivation when providing clear learning targets, offering student participation in developing evaluation criteria and measures, and assisting students to create reasonable learning goals. With student assistance, well-developed classroom assessments can be an integral part of nurturing positive student motivation and supporting the learning journey for students.

Classroom Assessments and Teacher Resistance

Change and resistance to change, i.e., the amount of resistance one demonstrates as he/she adapts and progresses through change, is a common theme in education. Through a summary of the literature on change and teacher resistance, this section provides key concepts regarding educational change, teacher resistance, and the implications of the literature with regards to classroom assessments. Finally, this portion will summarize research based strategies used to counteract resistance. Information summarized in this segment will provide educational leaders with strategies to assist in the goals of streamlining and accepting instructional change through the use of classroom assessments.

Clarifying Vocabulary

While it is important to recognize that resistance has the possibility to impede change, Maurer (1996) stated that it is important to use the power of resistance to build support for change. Therefore, a successful change will require “vision, persistence, courage, the ability to thrive on ambiguity, and a willingness to engage those who have a stake in the outcome” (Maurer, 1996, p 19). Both Maurer (1996) and Fullan (2001) contend that showing respect for those individuals resistant to change helps to build stronger relationships, as well as improving the overall change, because this act builds a stronger base for future changes. Overwhelming, resistance can be a powerful force as it provides energy to individuals while protecting them from harm. Before being able to

transform resistance, Maurer (1996) indicated how to identify the nine different forms of resistance. These forms of resistance are seen as:

- confusion—clouding discussions and individuals begin to hear different messages than what is actually provided.
- immediate criticism—identified by individuals offering their immediate disapproval, even before all portions of a plan are provided.
- denial—prevalent when stakeholders refuse to see things as different.
- malicious compliance—evident when individuals initially agree to a decision; however, in the end compliance for the decision is never obtained.
- sabotage—identified when an individual takes strong actions to purposefully stop the proceedings.
- easy agreements—different from malicious compliance as individuals believe the idea has merit in the beginning, but then realize implications for their hasty decision.
- deflection—occurs when individuals continually change the subject.
- silence—difficult to counter because the reasons for silence can vary and be unknown.
- in-your-face criticism—when individuals vividly express their viewpoints (pp. 26-28).

Maurer (1996) explained that, while it is important to identify the type of resistance an individual is displaying, it is equally important to learn from experience and incorporate strategies to counteract individual resistance. These strategies are referred to as “touchstones” in Maurer’s work. The first touchstone is centered on maintaining a clear

focus. Characteristics of this touchstone include keeping the goal in mind, maintaining a dual focus—one on the present and one on the future—and incorporating perseverance through the moments until the goal is reached. The second touchstone challenges individuals to embrace resistance by embracing the thoughts and feelings of those resisting the change. By embracing resistance, leaders will be able to understand the underlying reasons why a change is opposed.

Maurer (1996) continued describing the third touchstone as a strategy to respect those who resist. This touchstone is critical in building trust among individuals who resist a change. This touchstone can be identified by leaders listening to opposition with interest as well as always telling the truth when speaking to resisters. The fourth touchstone involves relaxation. Though unintuitive, relaxation during conversations with disapproving individuals, leaders are able to stay engaged and anticipate opposing individuals' overall intentions. Maurer (1996) explained that the more that is known about opposing individuals' hopes and fears, the more options will be available. Additionally, the more a leader is relaxed, the more the leader is in control and can lead with confidence. The final touchstone challenges leaders to join with the resistance, which is actually blending the leader's intentions with the intentions of resistant individuals. Joining the resistance also allows leaders to create a common understanding of the issues and begin to build a plan together. Maurer (1996) concluded by stating that if leaders incorporate strategies based on these touchstones, a greater chance of ensuring a new approach for change will consider both leadership's interests and opposition interests. Furthermore, Zimmerman (2006) stated that because resistance can be a factor

in the failure of school reforms, it is wise for leadership teams to analyze why their teachers resist change, before they can begin the work to resolve the resistance.

Changes in Educational Practice

As educators' research the process of learning and how this process affects student learning, it is inevitable that a change will occur. Why? Maurer (1996) argued that change follows a cyclical path consisting of six phases including: random incidents, recognition, initial actions, implementation, integration, and waning activity. Random incidents occur in an organization that signal a need for change, but often there is little evidence that change is needed. Eventually, there is recognition that a need for change is imminent, and organizations begin the initial steps of building urgency to address and find a solution to the problem. Once a solution is determined and implemented, it becomes integrated into the organizational culture. Over time members of the organization believe the usefulness of the solution has waned and is no longer needed or effective. As random incidents occur that may need to be addressed, educators need to identify the issues so strategies can be implemented to successfully facilitate the needed change to the organization.

Regardless of the process, changes will always occur when there are disagreements in the organization (Fullan, 1997). Fullan (2001, p. 33) wrote that while "change cannot always be managed or controlled, change can be understood and possibly led." He continued with six processes to help educators understand change. These processes include the acceptance of the following:

1. Innovation after innovation is not the goal for a school.

2. The best ideas are not enough for a school.
3. When the implementation dip occurs, appreciate it.
4. Resistance should be redefined.
5. Re-culturing of faculty and staff will be required.
6. Complexity should be valued over a checklist

Fullan (2001) explained the rationale of each process and why school leaders should not engage in multiple innovations at the same time. When participating in multiple innovations at once, schools begin to “lack depth and coherence” (Fullan, 2001, p. 36). By allowing time to embrace and build capacity for the change, educators will become committed to the change needed to solve a school’s complex problem. While it is important to have good ideas, Fullan (2001) reminds us that ideas do not translate into personal buy-in. Leaders who have mastered authoritative, democratic, associative, and coaching styles of leadership tend to have the best school climate and display the best school performance data. How does this relate to change?

Regarding the implementation dip that occurs when a change is implemented, Fullan (2001) wrote that educators’ confidence may begin to wane as they are required to learn new skills or accept new ideas because of the social-psychological fear of change. The fear stems from their possible feelings of inadequacy in having the necessary skills required to implement the change successfully. Leaders who are empathetic and sensitive to the understanding that change is a process and not an event will have greater results with school-wide change. The dip provides a sense of urgency while also providing a sense of moral purpose.

While it is comforting to listen to people who share the same ideas, Fullan (2001) argued that people learn from others who have differing opinions. Therefore, rather than ignoring thoughts from resistant colleagues, school leaders should present good ideas while listening to doubters and try to build good relationships with all stakeholders. Leaders should also balance the transformation of the school culture when implementing change (Fullan, 2001). This re-culturing of school personnel allows staff members to seek new ways of doing things, assess their effectiveness, and continue to incorporate these new ideas and practices.

Fullan (2001) continued by reminding us that change cannot be implemented in a step-by-step manner. While a checklist for a resolution may be requested by individuals encountering change, it is the combination of leadership styles used to understand the situation and leadership skills used during a situation which brings calm to the masses. Moreover, leadership which embraces individual differences, communicates a sense of urgency for change, provides engaging possibilities, and motivates individuals beyond their reach will inevitably conquer resistance to change (Fullan, 2001). Therefore, as school leadership begins to implement a change, its members should be reminded about the following points (Fullan, 1997):

- School leaders should go through a change process rather than making mandates affecting the whole school.
- School leaders should ensure that decisions are never made in a hurry.
- School leaders should be participants in meetings and not take over meetings.
- School leaders should encourage consensus over majority voting decision making.

Research Based Strategies Used to Combat Resistance

If educational changes that include instructional conversations based on assessment data or the use of peer feedback are inevitable, and leadership teams understand that teachers will display patterns of resistance, then the manner in which the new solution for the change is presented to teachers should be examined (Knight, 2009). Frequently, professional learning plays a key role in implementing solutions for identified school changes. To design the optimum professional learning experiences and reduce the potential effects of teacher resistance, Knight (2009) provided the following key questions, which should be used when developing professional learning to support instructional change:

- Is the new information shared with teachers powerful? Teachers often will resist change and new practices unless they are powerful and easy to implement.
- Is the new information easy to implement? While few teachers adopt new practices without some type of struggle, a new practice that is cumbersome and involves a large number of tasks and challenges will not be implemented. When possible, all new teaching materials should be created for professional learning participants.
- Are the instructors leading the professional learning experienced? Involving experienced teachers to lead sessions provides the participants with a rational foundation for implementing the instructional change. Moreover, when providing time for participants to practice and experiment with newly learned

strategies, there is a greater likelihood they will identify the effectiveness of the new strategies.

- Have participants been treated with respect? If change agents listen respectfully and communicate positively with participants, then their professional identity stays intact and resistance to change is reduced.
- Are the participants undertaking the thinking during the professional learning? Overall, teachers are frequently labeled as knowledge workers as they quickly think on their feet. Therefore, professional learning sessions should not ignore teacher's capacity for thinking, but rather incorporate it to ensure implementation for new strategies.
- How will past actions influence new learning? If schools frequently switch from one new instructional approach to another, implementation for new strategies is highly unlikely. Hence, a cycle of "attempt, attack, and abandon" is developed, as teachers attempt to implement the new learning without proper supports, and then inevitably attack the new strategies before effective implementation occurs with eventual abandonment of the program while progressing to the next idea. Past history should be examined while developing new professional learning experiences (pp. 509-512).

When attempting to use professional learning to assist in leading instructional change in schools, Fullen (1997), Zimmermen (2006), and Knight (2009) agreed that school leaders should focus on the fundamentals (curriculum, instruction, assessment, and culture) by identifying teaching practices, which are proven and powerful. Data should be used to monitor the impact of the newly chosen practices. The incorporation of quality coaching

during the implementation of the new strategy ultimately challenges teachers and supports risk-taking behaviors. School leaders should build trust with teachers which will lead to better professional relationships. As relationships improve, classroom dynamics improve. Professional learning should focus on a few critical instructional practices with embedded elements of teacher collaboration, coaching, and time for practice. Teachers should also have choices which will in turn translate into commitment for the new change. Finally, professional learning instructors should use precise explanations of new strategies while allowing teachers the freedom to adjust these strategies to fit their classroom instructional style.

Needed Professional Development

When examining the topic of change and resistance, Linkon (2005) reported that educators have good reasons to resist and reject assessment practices as these practices insult teachers by making them prove the value of their work. Moreover, Linkon (2005) explained that educators believe that their work is valuable, and should not be thought of as a commodity as they are indeed professionals and not mere workers. Teachers also understand that good assessments require time for development; however, while teachers need to learn how to design assessments, which can be an extensive process, resistance is prevalent because significant benefits for students and teachers from assessments are not clearly evident (Linkon, 2005). Linkon (2005) also stated that educators display resistance toward assessments because there is fear that assessments would force conformity in teaching practices.

To resolve these issues and reduce teacher resistance towards assessments, Linkon (2005) provided alternative ways to think about assessment. Rather than rejecting assessments, educators may want to consider joining the assessment movement by advocating for different forms of assessment which would provide the needed data. Educators can value the data from assessments as the data allow educators to improve teaching while maintaining high standards. Data from assessments also provides a platform on which to begin these key and challenging conversations regarding teaching and learning with peers. In essence, faculties will glean and gain more from talking about teaching and instruction.

If educators embrace assessments, then Liu and Carless (2006) identified the next hurdle for assessments in the classroom. When examining the use of peer feedback as a means to engage learners into conversations related to peers' performance to standards, Liu and Carless (2006) noted that peer feedback enables students to actively engage in their own learning as well as provides a greater potential for learning. According to Liu and Carless (2006), teachers identified four reasons why they were resistant to using peer feedback in the classroom: reliability, perceived expertise, power relations, and time available. In terms of reliability, educators identified the lack of knowledge and expertise of students, which results in an unreliable assessment of their peers. To explain perceived expertise, Liu and Carless (2006) stated that some students may feel that their peers are not qualified to provide feedback or helpful insight about their work. Regarding power relations, the authors explained that when teachers share the responsibility of providing assessment feedback with students, the teacher's power is shared, and at times, students

dislike having power over their peers. Finally, both teachers and students reported that providing correct feedback is time consuming.

In order to resolve these issues of teacher resentment toward the use of peer feedback in the classroom, Liu and Carless (2006) provided three possible solutions: the integration of peer feedback with peer assessment, strategies for engaging students using clear criteria, and cultivating a climate for the use of peer feedback. When explaining the integration of peer assessment with peer feedback, Liu and Carless (2006) stated that students could assess a small portion of the assessment, which when graded, would carry a small weight of the overall grade. As students become more involved with the development of assessments, Liu and Carless (2006) argued that by teaching students about standards, they will be more knowledgeable to make better judgments regarding peer assessments because they were involved in generating the assessment criteria—a skill needed for life-long learning. Finally, when cultivating a climate for peer feedback, Liu and Carless (2006) reported that the more peer feedback is used in the classroom, the greater the likelihood that students will develop the necessary skills to form sound judgments regarding their peers' work.

Primary Research Studies

Relevant research studies on the topic of classroom assessment and teacher resistance include five different studies. One such study was conducted by Pardo del Val and Martinez Fuentes (2003) to observe if resistance is higher to strategic change situations than in evolutionary change situations. The study involved 50 employees in different Spanish companies. The random sampling of companies was selected based

upon the criteria of having experienced a recent process change. The study design consisted of providing the participants with a detailed questionnaire and then conducting three personnel interviews with company managers. The analysis was conducted through quantitative measures utilizing ANOVA. Pardo del Val and Martinez Fuentes noted that training was important because it could “suppress communication difficulties and avoid resistance caused by communication barriers” (p.14). Findings from the study confirmed that participants are more resistant to change when the change is more radical and transformative.

Another study relating to the topic of classroom assessment and teacher resistance was conducted by Berkovich (2011) to examine the agenda-setting strategy used by teachers opposing national policy. The study involved teachers that were on strike in Israel for a 64-day period. The case study design collected data from teachers’ weblogs and school website entries. An inductive qualitative analysis of teacher text regarding their leader’s reform efforts and education policy concerns was completed. Findings from the study indicated agenda setting strategies, such as posting on weblogs and school websites, influenced national politics and swayed public opinion, thereby, validating the issue as a legitimate cause.

A third study related to classroom assessments and teacher resistance was conducted by Hollingsworth (2012) to recognize the relationship between the leadership role of principal and the individual teacher role when implementing the use of formative assessments. In addition, Hollingsworth also wanted to identify professional learning community support structures and the extent that the teachers were responsible for evaluating the uses of formative assessments and student learning. The study participants

included 38 teachers employed in a small mid-western high school. The study design included 18-months of observations which were then transcribed into field notes. In addition, semi-structured interviews were conducted with teachers and leadership personnel including the long-standing principal and district superintendent. Findings from the study included:

1. Teachers can be supported in their efforts to implement the use of formative assessment practices if they are provided time for reflection and conversation which in turn builds collaboration and teacher learning.
2. As school leadership teams participate in professional learning activities, they will be better prepared for specific supports, which could be needed for teachers in order to successfully implement professional learning objectives.
3. School-based leaders struggled with the distribution of school leadership. Additional struggles noted in the study included how organizational structures can assist a learning philosophy in a highly accountable environment and the role of an instructional leader.

A different study conducted by Frey and Fisher (2013) also relates to classroom assessments and teacher resistance as the researchers discussed a large school system's development of instructional reform strategies in order to increase student achievement. Participants in this study included 15,000 students attending seven different high schools in a large urban school system in the western United States. This mixed-methods research design consisted of three years of data collection in the form of observations, interviews, and analysis of student achievement scores. While the school leadership team was attempting to implement an instructional framework involving the use of focus lessons,

guided instruction, and collaborative learning, a key study outcome included the notation that teachers were satisfied with their current instructional performance and were not willing to change their teaching practices. Findings from the study revealed that key elements of a successful instructional implementation design should include: professional development including the use of instructional coaches, an outside consultant to facilitate the development of the instructional framework, and a consistent message to all staff members.

The fifth and final study relating to the topic of classroom assessment and teacher resistance was conducted by Berhe and Embiza (2015) to explore the use of continuous assessment at the post-secondary education level. The study involved 681 students and 199 instructors teaching in three different university settings and four different colleges in Ethiopia. The study design consisted of qualitative interviews and quantitative analysis—a T-test—of a questionnaire. Findings from the study revealed that poor knowledge and attitude in the practice of continuous assessment procedures resulted in university instructors not having adequate information regarding student progress in their courses. In addition, few instructors provided feedback or support to their students. Berhe and Embiza also included the following noteworthy comments:

Student comments included:

- Assessments were administered even though not all students had mastered the content.
- Student evaluation was completed by perceptions rather than evaluating a student's mastery of the content.

Teacher comments included:

- Class sizes were too large (80 to 120 students).

- Time constraints limited opportunities to provide student progress updates or instructional feedback.
- There was inefficient knowledge of continuous assessment implementation.
- Instructors were teaching too many different courses in the same semester and lacked adequate course preparation time.

Classroom Assessments and Teacher Resistance Section Summary

When educators identify a need for change to improve a teaching practice, leaders will most certainly experience resistance to the proposed solution. By being aware of different forms of resistance, leaders can incorporate different strategies to reduce the amount of teacher resistance. With increased accountability and assessments impacting the classroom, teachers are urged to incorporate peer feedback as a way to develop supplementary skills for life-long learning. As school leaders develop professional learning opportunities to implement change, considerations for teacher respect, collaboration, and trust will ensure that teacher resistance is minimized.

Classroom Assessments and Formative Instructional Practices

Incorporating the principles of formative instruction in the classroom can be a daunting task because understanding the *why*, *what*, and *how* elements of both formative instruction and formative assessment can be confusing to teachers. Information gathered from three different researchers, Dylan Wiliam (2011), Jan Chappuis (2009), and James Popham (2008), in the assessment field were examined in order to provide context for this topic. Similarities, complements, and differences were noted while reviewing text

written by these experts. In conjunction with research on this topic, this section will provide clarity for this subject by outlining why formative instructional practices are needed in today's classroom, what goes into the implementation of formative instructional practices, and how formative assessments are beneficial for both teachers and students.

Rationale for Formative Instructional Practices

According to Chappell (2013), high school students from the United States are below average in mathematics compared to other developed countries and almost average in science and reading. Twenty-nine nations scored better than the U.S. in mathematics, 22 educational systems scored better than the U.S. in science, and 19 other countries scored better than the U.S. in reading. This conclusion was based on data provided by the Program of International Student Assessment (PISA) after analysis of 2012 student scores. These are not good results for a country spending more per student than most countries (Chappell, 2013).

Educational experts such as Dylan Wiliam note that this phenomenon is a critical issue as educational improvement provides both individual and societal benefits. Wiliam (2011) stated that individual benefits from a good education include better health, a longer life, and higher earning potential. Wiliam also provided societal benefits from a well-educated public which include lower health costs, reduction in criminal costs, and over-all economic growth. When examining practices used to improve instructional practice, Wiliam noted that the following methods provided no real results in the area of educational improvement:

- Reduction in class size
- Focus on student engagement
- Offering charter school and magnet school options
- Inspection of academic and curriculum programs
- Applying principles from business and management to education
- Revision of textbooks
- Implementation of technology
- Reduction of teacher student ratio with teacher aides

According to Wiliam, while the above methods may have possibly affected the classroom, the best factor to improve student achievement in the classroom is to focus on teacher quality; therefore, a focus on professional learning would help to improve America's schools. While Wiliam discussed types of professional learning that have taken place in the past (e.g., learning styles, educational neuroscience, and focus on content knowledge), research has shown that using formative assessments during instruction have brought about gains in student mastery of content standards. According to researchers (Black & Wiliam, 1998; Schmoker, 2011), formative instructional practices have increased student learning as much as four times faster than traditional instructional methods equaling an additional six to nine months of learning growth per year. In addition, formative assessment benefits low-achieving students more than any other group of students. With acclamations for this level of potential student achievement gains, formative instructional practices should be examined for possible use in a classroom environment.

Components of Formative Instructional Practices

Before dissecting the elements of formative instructional practices, the definition of formative assessment should be discussed. In the literature there is a significant difference in the definition of formative assessment. For instance, Popham (2008) explained formative assessment as a planned process where assessments provided a level of student achievement toward a curriculum aim, and the evidence was used by teachers to adjust their instructional practices and students to adjust their personal learning tactics. Chappuis (2009) provided an alternative definition stating that formative assessment was both a formal and informal process used by teachers and students to gather evidence in order to improve the learning taking place in the classroom. Wiliam (2011) defined formative assessment as a process that should shape instruction based on the evidence of student achievement. The evidence should be interpreted in order to make decisions about what to do next in an instructional setting. While a universal definition may never be determined, standard elements in these three definitions center around a process in which evidence is gathered from assessments in order to improve a teacher's instructional practices and a student's learning strategy.

Each researcher studied for this review had different steps in the formative assessment process. For example, Popham (2008) stated that the process included four distinct levels including: teachers using formative assessments to gather evidence to adjust their current and future instructional activities; students using formative assessments to adjust their own learning tactics; a classroom cultural change shifting the purpose of assessment from grading and ranking students to information used for instructional changes; and using both professional development and learning

communities to elicit a school-wide adoption of one or more of his formative assessment levels. Chappuis (2009) proposed that formative instructional practices involve seven different strategies including: setting clear learning targets, providing examples of good and weak work, providing feedback, allowing students to self-assess and set goals, designing learning activities to focus on learning targets, permitting students to focus on revisions, and agreeing to student self-reflection with progress tracking. Furthermore, Wiliam (2011) suggested that formative instructional practices should include: effective feedback to students; students involved in their learning; teaching practices adjusted to reflect assessment results; assessments that affect student motivation and self-esteem; and the ability for students to assess themselves and understand how to improve their performance. A common thread through these different processes is that when assessment is used as a learning tool, it can maximize both student achievement and student motivation.

Implementing Formative Instructional Practices

Popham (2008) proposed the beginning of implementation by developing a “learning progression” (p. 24). The purpose for this learning progression was to devise a deliberate plan for providing instruction, which would contain both step-by-step content building blocks as well as include a reasonable number of assessment check-points. The assessment checkpoints then inform teachers and students of needed instructional/learning adjustments. Chappuis (2009) concurred though the term she used was “learning target” (p. 20) rather than learning progression, which provided answers to students for the question of *Where am I going?* The deconstruction of a standard into manageable learning

targets (e.g., knowledge/understanding, reasoning, performance skill, and product targets) was eventually used in planning for formative assessment—planning instruction through an assessment lens. Wiliam (2011) provided discussion on whether or not to post the “learning intention” (p. 56). In most cases, students should have an understanding of the learning intended from the instructional activity, though there are instances that take place in discovery learning where posting of the learning intention would be counterproductive. When designing instructional activities, Wiliam suggested that a backward design approach incorporating specific language, focus, and scoring elements would allow for better transfer of knowledge to a new situation for a learning intention. Regardless of the method proposed by the expert, it appears that a key element in beginning formative instructional practice implementation is the understanding of the standard being taught and building in formative assessment opportunities.

When reviewing the author’s text on what makes a good formative assessment tool, Wiliam (2011) offered a plethora of examples and suggestions—53 to be exact—in order to gather *thinking* evidence from students. For instance, strategies for questioning techniques, such as prose-pause-pounce-bounce, cold calling, question shells, and ask the audience were mentioned by William as ways to elicit evidence of student learning. Incorporating the use of mini white boards, and traffic light signals in the form of red, yellow, and green cups were suggested by both Wiliam and Popham (2008). For instance, teachers would pose a question to the class and ask the students to record their answer on the mini white board. As the teacher scans the student’s responses, a decision regarding if the lesson should continue as planned or the lesson should be halted to ensure that the students were learning the content would be made. Important points from the text

included statements outlining that all students were involved in the process of gathering evidence—not just the typical few who know all the answers—and to use a few, not all, strategies that were comfortable for the teacher (Chappuis, 2009; Popham, 2008; & Wiliam, 2011).

Examination of the text also provided two additional elements needed in order to incorporate formative instructional practices into the classroom environment. These two elements focused on a coaching method for instruction and the learning environment. Wiliam (2011) provided dialogue that when teachers deliver instruction to students using a coaching methodology—where students were shown, had opportunities to practice, and constructive feedback was offered—that the goal of student learning was achievable. In addition, both Wiliam and Popham (2008) advocated for a learning environment that was effective in motivating students and using assessments as a way to improve learning and not rank students' achievement levels. Popham shared several scripts and step-by-step instructions in his text, which would assist in the transformation of a traditional classroom to an environment where students were responsible for their own learning. In this type of effective learning environment, collaboration is key, and students are able to track their own learning progression.

Finally, incorporation of student feedback must be considered when implementing formative instructional practices. Chappuis (2009) explained that the goal of feedback was to identify where the student was in their learning and prompt needed learning in order to meet the desired learning goal. Chappuis (2009), Wiliam (2011), and Sharratt & Fullan (2012) outlined that effective student feedback shared the strengths of the student endeavor as well as provided a direction for meeting the learning goal. Feedback was to

be provided to students while the learning occurred which could provide teachers with opportunities for mid-course instructional corrections, if needed. These researchers stated that care should be given in feedback so as to not think for the student, but rather provide a corrective action to the student. In essence, the learning opportunity should not be taken away from the student when providing instructional feedback. In addition, Wiliam stated that there were three important principles regarding student feedback (pp. 129-130):

1. Feedback was more work for the student than the teacher.
2. Feedback should be related to the learning goals.
3. Feedback should be focused.

Lastly, a significant point made by Popham, Chappuis, and Wiliam is that once a grade has been given for the learning, student learning toward the skill has stopped and the experience is no longer a *formative* one. If teachers are interested in forms for providing feedback to students, Chappuis offers several teacher friendly black-lined masters to convey feedback—Stars and Stairs; That’s Good! Now This; Learning Chains; and Reviewing and Analyzing My Results.

Benefits of Formative Instructional Practices

Benefits for both teachers and students can be achieved when implementing formative instructional practices. For teachers, Chappius (2009) discussed the benefits of having self-reliant learners in the classroom—a goal all teachers have in common—as well as the opportunity to become a classroom facilitator rather than a classroom dictator. As teachers incorporate formative instructional practices into their instructional routines, several benefits for students will occur. Wiliam (2011) stated that students will become

more “self-regulatory” (p. 147) in their learning, increase their metacognition and raise their student performance, and increase their internal motivation, which will focus on their performance rather than competing with peers. This would be a huge paradigm shift for some teachers to experience.

To carry out this important endeavor, Wiliam (2011, p. 152) offers these five simple steps that teachers should consider:

1. Share learning goals with students so that they are able to monitor their own progress toward them.
2. Promote the belief that ability is incremental and not fixed—you can get smarter as you practice your learning.
3. Make it more difficult for students to compare themselves with others in terms of achievement.
4. Provide feedback that contains a recipe for future actions rather than focusing on past failures.
5. Use every opportunity to transfer control of learning from teacher to students and support their development as individual learners.

Georgia FIP: Professional Development

The need for teacher professional learning on formative assessment practices has been noted throughout this literature review. To answer this need, the Division of Assessment and Accountability in the Georgia Department of Education has acquired online instructional modules produced by Battelle for Kids (Georgia Department of

Education, 2016). In Georgia, the use of these modules is strictly on a voluntary basis, and there is no cost for a district if the modules are used.

Battelle for Kids is a non-profit organization, which specializes in developing custom learning management systems and informational portals. Consulting with assessment researchers, Rick Stiggins and Jan Chappuis, Battelle for Kids began offering the modules in 2010-2011 and continues to offer modules enhancements through 2016. According to the Assessment and Accountability division, these modules provide an opportunity for teachers to learn about incorporating both formal and informal assessment methods to obtain student learning instructional information (Georgia Department of Education, 2016).

The professional learning modules can be implemented online and through face-to-face interactions, though best practice for implementation would be through professional learning communities, which allows teachers to share their individual implementation experiences (Georgia Department of Education, 2016). The seven series FIP modules include the following content:

- Introduction to Formative Instructional Practices
- Clear Learning Targets
- Collecting and Documenting Evidence of Student Learning
- Analyzing Evidence and Providing Effective Feedback
- Student Ownership of Learning: Peer Feedback, Self-Assessment, and More
- Leading Formative Instructional Practices
- Coaching Formative Instructional Practices (pp. 3-4)

Most modules can be completed in an hour, though some modules may take up to two hours. Content presented in the modules is supported by Stiggins and Chappuis and adapted from their books *An Introduction to Student-Involved Assessment FOR Learning*, 6th ed. published in 2011 and *Seven Strategies of Assessment for Learning* published in 2009—both books were published by Pearson Education, Inc. Access to the modules can be obtained through the Georgia Department of Education website or through the Student Longitudinal Data System. Included in the modules are videos, facilitator materials, and participant handouts.

Primary Research Studies

Relevant research studies for the topic of classroom assessment and formative instructional practices include five different studies. One study was conducted by Hattie and Timperely (2007) to develop a model of feedback including how feedback could produce the maximum impact in student achievement. The study involved a meta-analysis of 53 different studies examining the timing of feedback. A key note reported by the researchers was that feedback is instrumental in the learning process but only after instruction had taken place. Moreover, if feedback was provided with specific information to make adjustments in the final product, the process was similar to new teaching rather than a punitive exercise. In addition, Hattie and Timperely emphasized the three needed questions used to provide feedback: where am I going, how am I doing, and where to next. Findings from the study included the observation that different types of feedback elicited different effect sizes in the analysis, when to provide feedback to students, and how positive and negative feedback affected student progress.

Another study relating to the topic of classroom assessment and formative instructional practices was conducted by Shepard (2008) as a review of literature which analyzed research studies involving the increase of student performance when exposed to formative assessment practices. Significant conclusions from this literature review include a recommendation that states merge professional development opportunities of standards based instruction with formative assessment practices avoiding teacher bombardment of separate instructional initiatives. The Georgia Department of Education has followed this recommendation by offering Formative Instructional Practices professional development modules for teacher access using the Statewide Longitudinal Data System (SLDS) platform. Moreover, a recommendation to provide the following content for professional learning was offered: questioning techniques, providing student feedback, understanding standards in student-friendly language, and incorporating student self-assessment techniques.

A third study related to classroom assessments and formative instructional practices was conducted by Slater, Davies, and Burgess (2009) to determine the effect a teacher has on student achievement and the differences in teacher quality among classrooms. The study participants included 7,307 high school students studying mathematics, science, and English and 740 teachers employed in 33 different schools in the United Kingdom. The study design included a regression analysis and an ANOVA of General Certification of Secondary Education (GCSE) exam scores to examine variability in teacher effectiveness. Findings from the study showed that the quality of a teacher's instructional methods has a great influence on student achievement. For instance, a highly-qualified teacher could enhance a student's achievement by 25% of a standard

deviation on the GCSE exam as compared to a non-qualified teacher. Therefore, in order to improve student achievement, the researchers concluded that the average teacher must also grow in their instructional knowledge and craft.

A different study conducted by Leigh (2010) also relates to classroom assessments and formative instructional practices as the researcher discussed the effect a teacher has on increasing student performance on state exams. Participants in this study included 90,000 third and seventh grade students attending schools in Queensland, Australia and 10,000 elementary school teachers. This quantitative research design consisted of F-test analysis of language arts and mathematics scores from standardized tests administered every other year between 2001 and 2004. Leigh reported that a highly-effective teacher could achieve in three-fourths of a school year what an ineffective teacher achieved in a full year; therefore, students receive more education with a highly-effective teacher than with an ineffective teacher. Findings from the study revealed that a positive correlation between student performance in language arts and mathematics and teacher effectiveness. In addition, there was no relation between student performance and teacher qualifications. Finally, female teachers produced higher language arts student performance results than male teachers.

The final study relating to the topic of classroom assessment and formative instructional practices was conducted by Rawlins (2010) to explore if written or oral feedback assisted students in their learning. The study involved three high school mathematics classes in New Zealand. The study design consisted of qualitative analysis of observations and focus group responses using a questionnaire discussing assessment experience. The questionnaire was developed by Gibbs and Simpson in 2003. Rawlins

noted in the study that teachers' reasons for avoiding the use of formative assessment included the impracticability of using this practice with large classes and substantial planning workloads. In addition, teachers reported that formative assessment practices were time-consuming and did not meet the demands of the learning process. The study reported that teachers thought students did not read or understand written feedback; therefore, they did not provide detailed written feedback and thought that oral feedback was both efficient and effective. In actuality, students preferred written feedback over oral feedback which allowed them to gain assistance from their peers.

Classroom Assessments and Formative Instructional Practices Section

Summary

While incorporating formative instructional and assessment practices into the classroom can be a daunting task, the benefits outweigh the cost for learning and planning. As teachers develop learning progressions and provide carefully-crafted instructional activities delivered through a coaching mentality, students will begin to learn and understand what is expected of them. When effective feedback is available, both teachers and students will be able to make adjustments in content delivery and learning tactics. Soon, students will be able to self-assess their knowledge toward a learning aim and set goals of mastery for themselves. Teachers can begin to close the achievement gaps by tracking student learning and provide opportunities for student reflection and sharing their successes. Chappuis said it best when she concluded her book by stating:

Assessment for learning is a gift we give our students. It is a mirror we hold up to show them how far they have come. It is a promise that we will use assessment, not to punish or reward, but to guide them on their learning journey. (Chappuis, 2009, p. 174)

Summary

When dissecting the purpose for authentic classroom assessments, Stiggins (2006) offered three considerations when formulating an assessment: assessments should provide genuine information regarding how the student is progressing through standard mastery of the course; assessments should occur on an ongoing basis allowing for student learning patterns to emerge and not as isolated classroom events; and finally, the instructional information gathered from assessments should be used by students and teachers and not merely provide information to school leaders. In addition to Stiggins, several researchers included in this literature review cited the benefits of incorporating formative assessment practices into instructional practice which include: increased student motivation, increased student achievement, and achievement of school annual objectives. When teachers implement formative instructional practices (e.g., deconstructing the learning standards into learning targets, incorporating questioning techniques into daily lessons, checking for understanding, modifying teaching practices, and providing feedback to students), it has been reported that these practices have strengthened the learning process for students. In turn, students are ready to establish their own learning goals, track their progress in the learning process through self-assessments, and understand how to accomplish their learning goals.

In order to provide a balanced conversation, it should be noted that other researchers have differing opinions, which include opposition to the generalization of small-size study results to major areas of education, inconsistencies of how formative instructional practices are displayed in classrooms, and fear of academic growth being halted due to inconsistencies of implementation between grade levels. Though there are differences in opinions, a common thread across the literature did include the need for professional learning.

Professional learning is needed to assist teachers with general assessment practices and development. In addition, professional learning should also incorporate formative instructional practices and explanations for assisting students with intrinsic, mastery goal-setting techniques. Finally, professional learning sessions should also include a variety of ways to elicit instructional information and learn how to incorporate feedback into instructional practice. As professional learning endeavors are developed, strategies to combat teacher resistance should also be incorporated.

On the subsequent pages is the study concept analysis chart. The chart outlines the major studies used to formulate the literature review including: the purpose and findings, the participants, the design and analysis, and the outcomes and pertinent comments. The chart is subdivided into four topics: classroom assessments, student motivation, teacher resistance, and formative instructional practices.

Concept Analysis Chart

TOPIC: Studies Related to Classroom Assessment

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Steadman (1998) Using classroom assessment to change both teaching and learning	To explore classroom assessment techniques in community colleges; Found that students increased control and voice in the classroom – student were more involved in their own learning – students benefited from improved instruction	Three community colleges in Northern California – Fall semester	Qualitative – Application of CAT documenting changes in teacher behaviors; documentation of student satisfaction when CAT used in course; and promotion of student metacognition through CATs	Additional results included advantages and disadvantages for faculty and disadvantages for students. Recommendations included: Faculty needed more time to discuss teaching strategies, Faculty needed training on Classroom Assessment Techniques (CAT) and cognitive learning theory, and teachers need to identify purpose for using CATs.
Wiliam, Lee, Harrison & Black (2004) Teachers developing assessment for learning: impact on student achievement ANCHOR STUDY FOR DISSERTATION PROPOSAL	To study how teachers incorporated formative assessments and the effects on student achievement summative assessments; Found that teachers improved in their use of formative assessment – the cost of support was approximately \$3,000 per teacher – improving formative assessment does increase student performance on summative assessments	Two LEAs in England using six different high schools; 24 science and math teachers (volunteered)	Quantitative – ANOVA statistical analysis including effect size Qualitative – categorical strategies of action plans	Intervention (professional learning) was offered, and then analysis of action plans and student performance scores was conducted. Good coding examples Input and output variables

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Yu & Li (2014) Group-based formative assessment: A successful way to make summative assessment effective	To identify if group-based self-assessment is or is not an effective practice over individual review for enhancement of reading comprehension Students who participated in group-based self-assessment scored significant higher (10% to 2.4%) than students who participated in individual reviews. Students found value in group-based self-assessment and were consistent or improved in their knowledge based on the re-test results.	Eighth grade: 83 students (43 girls and 40 boys) in a middle school in Northern China Two English classes	Quantitative – Classroom assessment consisting of multiple choice, vocabulary and grammar, reading comprehension and writing items Student survey of 6 questions	Good notations of formative assessment including: used to identify students strengths and weaknesses, used to plan for instruction, and used to evaluate student progress in standards mastery Many teachers still do not understand how to correctly implement formative instructional practices (e.g., develop regularly planed assessments to document progress, student self-assessment practices, provide feedback to aid in learning, modify teaching strategies to ensure student mastery of delivered content.) Re-test should have been developed with different items aligned to the same content objectives as the first test.
Afitska (2014) Use of formative assessment, self- and peer-assessment in the classrooms: Some insights from recent Language Testing and Assessment (LTA) research	To discuss three concepts (formative teacher assessments, self-assessment, and peer-assessment) as they relate to the development of classroom assessments There is still a need to examine the effectiveness of questioning techniques and instructional methods for standard mastery. In addition, there continues to be a need for additional studies incorporating formative assessment in a variety of content areas.	None	Review of Literature	Issues expressed regarding the amount of time it takes in utilizing formative assessment procedures can be resolved by planning out classroom assessments. Teachers are still struggling with how to implement formative assessment procedures and interpreting the data gathered from these assessments. Teachers have not been trained on how to provide effective instructional feedback to students.

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Reed (2015) Middle level teacher's perceptions of interim reading assessments: An exploratory study of data-based decision making	To determine how teachers were making data-based instructional decisions Teachers were only using holistic data – provide through summative state assessments – to identify instructional gaps and applying lessons learned to current instructional planning. If assessments are to guide student achievement efforts, then the assessment must provide accurate, meaningful information for teachers. Long term professional development incorporating assessment and instruction could help teachers understand how to develop data-driven instructional plans.	12 Middle school teachers teaching in two different schools located in southwestern United States Students were mostly Hispanic (61%) and economically disadvantages (53%) Teachers taught 1 language arts and reading though one participant was an instructional coach and another participant was an EL teacher.	Qualitative – Interviews and focus groups Six questions developed to elicit teacher planning details incorporating data from assessments Focus groups content was recorded for audio. Transcripts were reviewed through member checking	Teachers discussed student performance results from three different assessments: 1. Oral reading fluency (ORF) from the Texas Middle School Fluency Assessment - this data source was only gathered from pre-identified students in need of reading intervention and had a moderate validity correlation with the state summative assessment 2. Retelling of reading details- this data source was regarding highly by teachers though administration procedures were modified from state administration manuals and had the weakest validity correlation with the state summative assessment 3. Benchmark assessments developed from released state items - this data source was not regarded a valid data source and teachers lacked confidence in the assessments; however, it had the highest validity correlation with the state summative assessment

TOPIC: Studies Related to Student Motivation

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Kusurkar, Croiset & Ten Cate (2001) Twelve tips to stimulate intrinsic motivation in students through autonomy-supportive classroom teaching derived from Self-Determination Theory	To explain the concept of autonomy-supportive teaching; Found that autonomy-supportive teaching is not difficult to implement into teaching practices	Netherlands	Qualitative – Provided 12 tips to teachers in order to stimulate intrinsic motivation in students	Twelve tips
Brookhart & Durkin (2003) Classroom assessment, student motivation, and achievement in high school social studies classes	To describe the effectiveness of different classroom assessments in high school social studies classes; Found that performance assessments attributed to productive student goal orientations and learning strategies	Large urban high school – 1 teacher and five classes volunteered	Quantitative – Descriptive statistics for scaled variables Qualitative – Coded interview	Results included both QUAN and QUAL descriptions Designing assessments that: allow student ownership, important and worth working for, and accomplishable with reasonable effort
Stefanou & Parkes (2003) Effects of classroom assessment on student motivation in fifth-grade science	To explore if the claim that performance assessments foster positive motivational orientation for students over multiple choice assessments; Found students express they knew how to prepare for paper and pencil assessments over performance assessments	Rural elementary school in the northeast – 79 students in 1 teachers classroom (3 classes) but 57 students qualified for analysis January to June	Quantitative – Regression analysis (multivariate analysis of variance) Qualitative – Asked students questions	Limitation of study were a small sample First study of this type and additional research is needed on the effects of assessment type and student behavior

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Clark (2012) Formative assessment: A systematic and artistic process of instruction for supporting school and lifelong learning	To review literature on implementation of formative assessment and the degree of which formative assessment is actually used in classrooms Students need to: know details regarding the standards they are to learn, understand that assessments can be motivating rather than sorting, take responsibility for their own learning, and receive feedback in order to improve their learning.	None	Review of Literature	2001 – Teachers identify the relevance in using formative assessment to increase student achievement, but have little knowledge of how to implement the strategy into regular classroom practice. Feedback is also listed as a key ingredient in the formative assessment process. 2010 – Teachers are now incorporating portions of the formative assessment process, but not on a consistently. Needed elements for success implementation are: instructional leadership, teacher training, buy-in from parents and students. Collaborative, on-going professional learning is needed in order to implement formative assessment into classroom practice.
Harrison, O’Hara & McNamara (2015) Re-thinking assessment: Self- and peer-assessment as drivers of self-direction in learning	To determine how self- and peer-assessment can assist in the development of students attitudes and behavior in becoming a self-reliant and life-long learner. Students develop skills becoming better communicators, critical thinkers, and collaborative team members – increasing their personal effectiveness as classroom students - when they participate in self- and peer-assessment activities. Self- and peer-assessment strategies can be used by any age learner and in any content area.	Action Research including 11 teachers and 523 students from Ireland	Qualitative – Informal meetings with teachers, in-depth interviews, observations, and research journals	Researchers noted that “Assessment is a learning methodology.” This study shared the emerging themes that were present from their analysis of interviews, observations, and journal entries. Benefits of exposing young students to use of self- and peer-assessment are: • Greater chance to develop self-reliance • Effective learners • Independent, critical thinkers • Able to judge own performance without becoming judgmental • Make decisions • Responsible and accountable

TOPIC: Studies Related to Teacher Resistance

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Pardo del Val & Martinez Fuentes (2003)	To observe if resistance is higher in strategic changes than in evolutionary changes;	Spanish companies with more than 50 employees; random sampling	Quantitative – Descriptive statistics and deviation analysis	Training is important because it can suppress communication difficulties and avoid resistance
Resistance to change: a literature review and empirical study	Found that the more radical and transformative the change is, the more powerful resistance to change is			Interesting lit review
Berkovich (2011)	To examine the setting strategy used by teachers opposing national policy	Israel – 64 day teacher strike in 2007	Qualitative – Inductive analysis first with meaning units and then with categories	Interesting section on “self as a researcher”
No we won’t! Teacher’s resistance to educational reform	Found that agenda setting strategy influences the politics as well as the use of emotional and rational appeals		Generalizations provided	Examples of actual text by category name was provide in the study Limitations include the collection of data two years after the strike Provided two additional ideas to carry the research forward
Hollingworth (2012)	To recognize the relationship between the leadership role of principal and the individual teacher role when implementing the use of formative assessments. In addition, the researchers also wanted to identify professional learning community support structures and the extent that the teachers were responsible for evaluating the uses of formative assessments and student learning	38 teachers – 15 teachers are members of the Building Leadership Team (BLT). All teacher participants work in a small mid-western high school containing 457 students. The student teacher ratio is 12:1, and the principal has been the school’s leader since 2001	Qualitative – Observations formatted into field notes, transcribed interviews, and school artifacts	1. Teachers can be supported in their efforts of implementing the use of formative assessment practices by being provided time for reflection and conversation which in turn builds collaboration and teacher learning. 2. As school leadership teams participate in professional learning activities, they are better prepared in anticipation of what supports are needed for teachers in order to successfully implement professional learning objectives. 3. School-based leaders struggled with the distribution of school leadership. Additional struggles noted in the study included how organizational structures can assist a learning philosophy in a highly accountable environment, and the role of an instructional leader.

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Frey & Fisher (2013) A district-wide high school formative experiment designed to improve student achievement	To discuss a large school systems development of instructional reform strategies in order to increase student achievement Key elements of a successful design include: professional development including use of instructional coaches, an outside consultant to facilitate the development of the instructional framework, and a consistent message to staff members.	Urban district containing 15,000 students attending seven high schools. The district as a whole has 43% EL and 59% ED	Quantitative – analysis of student achievement scores Qualitative – Interviews (transcribed) and observations Data collected for three years	Teachers were satisfied with their instructional performance and were not willing to change their current practices. Instructional framework evolved to include focus lessons (mini lessons), guided instruction, collaborative learning in small student groups, and independent learning as students approach standard mastery. This framework was facilitated by instructional coaches at the school. Development of a common vocabulary is a key ingredient for success.
Berhe & Embiza (2015) Problems and prospects of implementing continuous assessment at adigrat university	To explore the use of continuous assessment at the post-secondary education level. Due to poor knowledge and attitude in the practice of continuous assessment procedures, university professors did not have adequate information regarding student progress in their courses. In addition, very few of the professors provided feedback or support to their students.	681 students and 199 instructors in three universities in addition to 681 students and 199 instructors in four colleges in Ethiopia. Purposeful selection of study instructor participants. Random selection of study student participants.	Quantitative – Analysis of structured questionnaire (T-test) Qualitative – Interviews	In interpreting this study, continuous assessment is regarded as assessment for learning (formative assessment). Student comments included: - Assessments were administered even though not all students had mastered the content - Student evaluation was completed by perceptions rather than evaluating a student's mastery of the content Teacher comments included: - Class sizes were too large (80 to 120 students) - Time constraints limited opportunities to provide student progress updates or instructional feedback - Inefficient knowledge of continuous assessment implementation - Instructors were teaching too many different courses in the same semester – lack of adequate course preparation time

TOPIC: Studies Related to Formative Instructional Practices

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Hattie & Timperley (2007) The power of feedback	To develop a model of feedback outlining how feedback can produce the maximum impact in student achievement Results included: • Types of feedback with corresponding effect sizes • When to provide feedback to students • How positive and negative feedback effects student progress	12 meta-analysis examining the effects of feedback 53 studies examining the proper timing of feedback	Meta-analysis Review of Literature of instructional feedback Feedback is instrumental in the learning process only after adequate instruction has taken place	If feedback is provided with specific information to make adjustments in the final product, the process acts like new teaching rather than a punitive exercise. Different types of feedback elicit different effect sizes ranging from 1.10 for Cues to 0.14 for offering praise. Three important questions: 1. Where am I going? 2. How am I doing? 3. Where to next? Teachers need to provide effective instruction as well as a classroom climate conducive to receiving instructional feedback.
Shepard (2008) Formative assessment: Caveat emptor (Buyer beware: check the quality before you purchase)	To review literature for formative assessment and sighted the results of Black and Wiliam's work documenting the increase in student achievement of a half years' worth of growth when using formative assessment practices. These practices include: questioning techniques, providing student feedback, understanding standards in student friendly language, incorporating student self-assessment techniques	None Focus for US	Review of Literature	Recommendation that states should merge professional development opportunities of standards based instruction with formative assessment practices avoiding teacher bombardment of separate instructional initiatives. Hence, the development of Formative Instructional Practice modules by Battele and eventually purchased by Georgia Department of Education.

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Slater, Davies & Burgess (2009) Do teachers matter? Measuring the variation in teacher effectiveness in England	To determine the effect a teacher has on student achievement and the differences in teacher quality among classrooms The quality of a teacher's instructional methods has a great influence on student achievement; therefore, in order to improve student achievement, the average teacher must also grow in their instructional craft.	7305 students (age 16) in the United Kingdom 740 teachers in 33 different schools	Quantitative – Regression analysis and ANOVA to examine variability in teacher effectiveness State exam results were from 1999 to 2002 Scores are from math, science, and English	A highly qualified teacher could enhance a student's achievement by 25% of a standard deviation in General Certification of Secondary Education (GCSE) points.
Leigh (2010) Estimating teacher effectiveness from two-year changes in student's test scores	To discuss the effect a teacher has on increasing student performance on state exams The researchers found a positive correlation between student performance in language arts and math due to the teacher effect as well as no relation between student performance and teacher qualifications. Female teachers produced higher language arts student performance results than male teachers.	90,000 students (3 rd grade to 7 th grade) in Queensland, Australia 10,000 elementary school teachers	Quantitative – F-test Scores are from 2001 to 2004 – administered every other year and students needed two scores to be included in the study Scores are from language arts (literacy) and math (numeracy)	The researcher even accounted for “teacher demographics” meaning the teaching location included in a highly performing school and student family background. Other variable included in the analysis were advanced degrees, age, and years of experience. A highly effective teacher can achieve in three –fourths of a year what an ineffective teacher achieves in in a full year; hence, students receive more education with a highly effective teacher than an ineffective teacher.

STUDY	PURPOSE/ FINDINGS	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES/COMMENTS
Rawlins (2010) Student participation in formative assessment for NCEA	To conclude if written or oral feedback assist students in their learning Teachers thought that students did not read or understand written feedback; therefore they did not provide detailed written feedback and thought that oral feedback as both efficient and an effective practice. In actuality, students preferred written feedback over oral feedback which allowed them to gain assistance from their peers.	Three math classes at the high school level in New Zealand	Qualitative – Observations Focus Groups Questionnaire – Assessment Experience Questionnaire by Gibbs and Simpson, 2003. Purposeful sampling was used	National Certificate of Educational Achievement (NCEA) Teachers reasons in avoiding use of formative assessment: Large class sizes and substantial workloads • Impractical • Time-consuming • Does not meet demands of the learning process High school teachers in particular do not understand the uses of formative assessment

CHAPTER III

METHODOLOGY

One phenomena occurring in Burkett Public Schools—a pseudonym for the study’s setting—is the rate at which students are passing and excelling in their courses based on teachers created quizzes and test scores; however, the frequency of students performing at high levels on district and standardized assessment is not equivalent. Research has shown the use of formative assessment is beneficial for both student achievement and student performance on standardized assessments (Frey & Fisher, 2013; Harrison, O’Hara & McNamara, 2015; Wiliam, Lee, Harrison & Black, 2004). As school leaders and teachers implement Formative Instructional Practices (FIP) in schools and classrooms, lessons learned regarding implementation and usefulness of the learning framework would be beneficial for other schools within the district. FIP is an online professional learning course designed to provide further development for teachers in the area of formative assessment. A qualitative research design was selected to study the perceptions of individuals implementing FIP in elementary and high school environments. Within this chapter, reasons for selecting a qualitative approach and details of the study’s design are explained. In addition, step-by-step protocols are provided, including how the data would be analyzed and reported.

Research Questions

For this study, one main research question was written from topics found in the literature—formative assessment and ways to improve student performance in the classroom—and three secondary research questions were written to address perceptions involving student motivation, the

development of classroom assessments, and teacher's motivation to change their instructional practices. These questions were used to ascertain teachers and leaders perceptions of how Formative Instructional Practices could possibly assist in increasing student achievement.

- What are teachers' and leaders' perceptions of Formative Instructional Practice implementation?
 - o How do teachers and leaders perceive that the use of Formative Instructional Practices contributes to the development of student motivation?
 - o How is the implementation of Formative Instructional Practices assisting teachers in the development of classroom assessments for students?
 - o What factors impact teachers' motivation to change their classroom instructional practices?

Research Design

A basic interpretive qualitative research design (Merriam, 2009) was used to discover how a professional learning initiative impacted student achievement for students in elementary and high school classes. When determining which qualitative approach to incorporate, a constructivist approach was selected to construct meaning from the interactions between the researcher and local school teachers and leaders who are actually involved with the professional learning implementation (Teddlie & Tashakkori, 2009). In order to construct this meaning, analysis of how teachers were implementing knowledge gained from professional learning activities—specifically designed to teach teachers about formative instructional practices—helped to identify if whether an instructional strategy could improve student performance on district assessments.

Incorporating the paradigm of constructivism to answer the study's research questions implies that a qualitative descriptive approach would be appropriate for adding to the body of knowledge on formative assessments (Teddle & Tashakkori, 2009). Guba and Lincoln (1994) explained that while human behavior is difficult to understand; nevertheless, the use of qualitative data can provide an opportunity to gain an insight into the decisions that are made for a particular situation. Therefore, using a qualitative approach offers a chance to explore the reality of using Formative Instructional Practices (FIP) in a classroom. Is all the effort involved in using FIP really worthwhile? Using this qualitative approach, the researcher was able to understand and reconstruct the reality of FIP implementation (Guba & Lincoln, 1994).

The main purpose for using a qualitative approach and methods was to understand and reconstruct the opinions and beliefs that teachers and leaders hold regarding the use of FIP to improve student achievement in the classroom (Guba & Lincoln, 1994). Therefore, the qualitative research design for this study included data collection from three sources: focus groups, interviews, and document analysis of classroom assessments. Triangulation of data sources provided the study with different perspectives of FIP incorporation into the classroom, as well as gave the study an element of credibility (Teddle & Tashakkori, 2009).

Before any data collection occurred, and after successful acceptance of both university and district Institutional Review Boards (IRB) were obtained, the researcher sought permission to conduct research with five high school and twenty-six elementary school principals in Burkett Public Schools (NIH Office of Extramural Research, 2011) using a letter of permission (Appendix A). Burkett is a pseudonym for an actual urban district located in the southeast region of the United States. Participating elementary and high schools were selected based on two criteria. First, a representative from the school leadership team must have participated in a voluntary cohort

professional learning session discussing the FIP modules. Second, the school administration must have implemented the use of the FIP modules with their teachers. The first criterion was confirmed with the district Assessment Office, and the researcher confirmed the second criterion by checking the Battelle for Kids web site. This website was developed by a non-profit organization to provide professional learning content as well as manage participant usage of the learning modules.

There were five high schools with more than ten accounts in the learning management tool and twenty-six elementary schools with more than ten accounts. The letter for permission (Appendix A) was sent to schools with more than ten module accounts—ensuring that accounts are for both school leaders and teachers working in the school. Schools with the highest number of accounts were contacted first. If there was no response or permission was not granted, then the researcher contacted the remainder schools in order of the number of accounts per school. Since all schools have a varied number of accounts, the number of accounts was viewed before any additional letters of permission were sent to principals.

After permission was secured from the school principal—and after the university and district’s Instructional Review Board (IRB) applications had been approved—additional communication to the schools included the announcement of a school leader focus group and separate teacher focus group session (Appendix B and Appendix C), thus providing a homogeneous grouping of participants segmented by their job titles (Morgan, 1997). Focus group sessions took place in a central location within the school district, and a light dinner and snacks were provided as an attempt to encourage group participation. Offering two different types of focus groups provided participants with an environment that would elicit honest responses and a sense of comfort to express their opinions with their peers (Morgan, 1997). All focus group participants signed-in and were given a participant code with a pseudo name in order to protect their identity during the

research study (Bloomberg & Volpe, 2016, Denscombe, 2011). Audio content from each focus group was transcribed by a third party vendor (Kleiber, 2004; Merriam, 2009; Morgan, 1997). A detailed focus group discussion guide is included in Appendix D.

The purpose of the semi-structured interviews was to gain additional perceptions on how instructional practices have changed since participating in the Formative Instructional Practices modules (Bloomberg & Volpe, 2016; Denscombe, 2011; Merriam, 2009). Teacher participants were informed that they had a chance to win a \$100 gift card to be awarded through a drawing. Only teachers who completed an interview or focus group were eligible to win the gift card. The interviews took place in a central location within the school district, after the participants contracted day concluded (Denscombe, 2011; Merriam, 2009). Following the same practice used with focus groups, interview audio content from each interview was transcribed by a third party vendor (Merriam, 2009). A detailed interview guide is found in Appendix F.

As teacher interviews concluded, a request for a document analysis of classroom assessments used during the 2016-2017 school year was made (Bloomberg & Volpe, 2016). If the interview participant agreed, the teacher was given a large envelope with a delivery address to collect these classroom assessments. Finally, willing participants were asked to submit the classroom assessment documents within a week. Each item on the submitted classroom assessment document was assigned a Depth of Knowledge (DOK) level, and this level was validated by a former member of the Burkett Public Schools Assessment Office.

Focus Group Details

The use of focus groups was one method for collecting qualitative data for this study. In using focus groups, the researcher hoped to obtain valuable participant opinions and perspectives

that might not have been expressed outside of a group environment (Denscombe, 2011; Kleiber, 2014). To form the focus groups, participants were invited to complete an electronic schedule created through a google.doc link included in their letter (Appendix C). In order to form homogeneous role-based groups, focus groups for leadership personnel would have a different scheduling link than the focus groups for teacher personnel (Kleiber, 2014). The use of homogeneous role-based groups allows for participants to share their opinions and perspectives in an environment free from evaluative judgment (Denscombe, 2011; Kleiber, 2014; Morgan, 1997). The focus groups contained two to five participants and lasted from one to one-half hours in length (Denscombe, 2011; Kleiber, 2014; Morgan, 1997). With the intention of encouraging focus group participation, light snacks and beverages were provided to all participants (Morgan, 1997).

Focus group sessions were held in a conference room in a suite located in a centrally located office building in the school district. This location provided reasonable traveling distance for participants who were willing to devote their time to help with this research study (Denscombe, 2011; Morgan, 1997). Permission for conducting focus group sessions in this conference room was acquired from the proper management personnel. The conference room area provided both a comfortable setting as well as an environment, which promoted candid, nonjudgmental comments on a professional topic (Kleiber, 2014; Morgan, 1997). A total of two teacher-based focus groups and two leader-based focus groups were scheduled in order to ensure that a sufficient amount of time was available for emergence of themes and discussion patterns (Kleiber, 2014; Morgan, 1997).

The focus group sessions began with a welcome and short introductions, allowing for participants to become acquainted with one another before sharing their opinions and perspectives (Kleiber, 2014; Merriam, 2009). Denscombe (2011) suggested that the role of the facilitator also include the ability to keep the discussion on the focused question or topic posed to the group and

encourage participation from all members of the group. All participants in the focus group were given “ground rules” that included: one person speaks at one time, and assurances that no opinion or statement is unacceptable (Kleiber, 2014; Merriam, 2009). Above all, a key responsibility of the researcher was to ensure that an environment of trust and confidentiality was conveyed allowing all participants to feel at ease and able to express themselves freely (Denscombe, 2011). While the beginning of the meeting allowed participants an opportunity to have a free discussion on the topic, during the question and answer portion of the meeting, the same questions, asked in the same order, were used to ensure standardization and that the structure protocol was followed among all focus groups (Morgan, 1997).

All focus group session content was recorded with the use of a digital dictation machine allowing the researcher to send the recordings to a third party transcriber (Morgan, 1997). A back-up recording was made using an app on an electronic device. An assistant facilitator was onsite during all focus group sessions to monitor recording equipment (Klieber, 2014; Morgan, 1997). A live test of the equipment was conducted before the beginning of the meeting (Morgan, 1997).

The researcher served as the main facilitator and posed the focus group questions to the participants (Kleiber, 2104). As needed, additional probing questions were used to help gain a greater insight to participant’s remarks (Klieber, 2014). Neutrality on the part of the facilitator was important to prevent personal biases. Therefore, the facilitator did not show any sort of confirmation that a participant statement matched the facilitator’s own views on the topic (Klieber, 2014). During all focus group sessions, the facilitator took field notes to help guide the focus group conversation as well as assist the researcher in the analysis of the final transcripts—allowing the researcher to avoid premature study conclusion and facilitator bias (Denscombe, 2011; Klieber, 2014; Morgan, 1997). The focus groups were concluded by the facilitator asking if any participants had anything

else that came to mind which would aid the researcher with the study—an inclusion of a final statement or an opportunity to expand on an opinion that they might have been holding back. The group was thanked for their participation (Klieber, 2014; Morgan, 1997).

While a limitation in using focus groups includes the time it takes to complete them, the opinions, thoughts, and beliefs shared by members of the focus group generated valuable data used to answer the researcher's questions (Kleiber, 2014). Furthermore, though the setting for the focus groups seemed a bit unnatural and the discussions were controlled by the facilitator, additional advantages of using focus groups included the gathering of direct evidence about the similarities and differences in the participant's opinions as well as the ability to provide a large amount of interaction on a single topic within a limited amount of time (Morgan, 1997).

Data confidentiality was considered when using focus groups (Bloomberg & Volpe, 2016; Morgan, 1997). Therefore, the facilitator assured the focus group participants that only the transcriber and the researcher would listen to audio recordings and review the transcribed content. The overall results from the study would be shared with the participants and involved school leadership teams (upon request). At no time would a participant's real name or work location be identified or used in the study. Finally, any budgetary consideration involved with hosting a focus group (e.g., providing beverages and light snacks/dinner; payment of transcriptions) was the sole responsibility of the researcher (Morgan, 1997).

Interview Details

The use of interviews to collect qualitative study data allows researchers an opportunity to delve deeper into the topic using another's perspective (Merriam, 2009). An email reminder was

sent several days in advance of the scheduled interview assuring that the original scheduling was still be available for the participants.

The setting for each interview was in a central location in the district—scheduled after the conclusion of the participants' contracted day (Denscombe, 2011). In conducting these interviews, it is important to note that each interview represents an opportunity to gather interpersonal information through a conversation about FIP practices in a specific classroom (Brinkmann & Kvale, 2015). For these situations, the researcher/interviewer becomes the key instrument of this process; therefore, it is essential to understand and incorporate interview techniques (Brinkmann & Kvale, 2015). It is important to note that the interviewer had a good grasp of the topic, had conversational skills, and was able to make instantaneous decisions regarding what to ask and how to ask a variety of pertinent questions (Brinkmann & Kvale, 2015; Denscombe, 2011). In addition, the interviewer acted in a gentle and sensitive manner allowing the interviewee to think and proceed at their own pace while actively listening to their responses (Brinkmann & Kvale, 2015; Denscombe, 2011). An interview guide was also used to assist the interviewer with the semi-structured questions (Denscombe, 2011; Merriam, 2009). Using a semi-structured interview format allowed the interviewer the opportunity to respond to what the interviewees shared and to appreciate their experiences, which added to the new ideas for the topic (Denscombe, 2011; Merriam, 2009).

To begin each interview, the interviewer provided a brief introduction defining the purpose of the interview, how the interview would be recorded, and asked if there were any questions before the interview began (Brinkmann & Kvale, 2015). During this time, it was important for the interviewer to be transparent, to allow the interviewee to begin trusting the interviewer (Brinkmann & Kvale, 2015). Then the interviewer asked the interviewee about their background and their role as

it relates to the research study, which allowed the interviewee an opportunity to begin the actual interview on a familiar footing (Denscombe, 2011).

All interview content was recorded with the use of a digital dictation machine allowing the researcher to send the recordings to a third party transcriber (Brinkmann & Kvale, 2015; Denscombe, 2011). A back-up recording was made using an app on an electronic device (Brinkmann & Kvale, 2015; Denscombe, 2011). A live test of the equipment was also conducted before each interview (Denscombe, 2011). All interview content was then sent to a third party vendor for the transcription process (Brinkmann & Kvale, 2015).

As the interview progressed, field notes were taken to use as a resource for any information that a recording might have missed (Denscombe, 2011). When interviews were concluded, the interviewer provided a recap of the interview using main points to describe what was learned through the interview (Brinkmann & Kvale, 2015). This interview debriefing also provided an opportunity for the interviewee to provide any additional information that might be helpful for the interviewer (Brinkmann & Kvale, 2015).

Data confidentiality was maintained for the interviews (Bloomberg & Volpe, 2016); therefore, the facilitator assured the interview participants that only the transcriber and the interviewer would actually listen to audio recordings and view the transcribed content generated by the interviews. At no time would an interview participant's real name or work location be identified or used in the study—pseudonyms were used. Copies of the interview transcript were made available to interviewees if they wished to review their contributions to the study. Finally, any budgetary consideration involved in conducting the interviews (e.g., the \$100 gift card) was the sole responsibility of the researcher (Brinkmann & Kvale, 2015).

The use of a drawing for interview participants was conducted in the following manner: each participant who agreed to an interview or a focus group would be eligible to win the drawing. In order to actually win the drawing, a ticket was completed (Appendix I). Tickets were offered to all teacher participants after a completed session and before the participant left the meeting location. All completed tickets were stored by a neutral third party. After all focus groups and interviews were completed, the drawing was conducted with a neutral third party selecting the winning ticket. Once the winning ticket was selected, the researcher contacted the winner, and sent the gift card to them via the Burkett Public Schools district courier service.

There were specific advantages and disadvantages for collecting data from interviews. Advantages include obtaining deep and personal insights included in the provided information, which could not be captured using another method (Denscombe, 2011). There was also a high response rate associated with completed interviews. Interviews also provided the interviewer with the flexibility to make adjustments in the line of questioning during an interview (Denscombe, 2011). Disadvantages for using interviews as a method for collecting data included the time required to analyze the data collected, the possibility that the interviewees were inhibited by the recorder, and the possibility that the interviewer accidentally provided visual or verbal clues which could negatively influence the provided responses (Denscombe, 2011). To overcome the potential disadvantages, the researcher completed a practice interview session, which included transcription and data analysis. Though the researcher was not an expert in interviewing, the practice session provided ample insights for future interview opportunities.

Document Analysis Details

To achieve a full understanding for how FIP practices are implemented in the classroom, and provide credibility for the study, triangulation using a third data collection approach was needed in order to examine the practice from a different angle (Bloomberg & Volpe, 2016). This third data source was attempted by conducting a document analysis of teacher classroom assessments (Appendix J). Using document analysis in a study provides the researcher with an opportunity to analyze the assessment process taking place in the classroom and helps explain the use of formative instructional practices in the classroom (Shenton, 2004). Unfortunately, only four classroom assessments were collected during the study for document analysis; therefore, conclusions cannot be drawn from this small sample. While the teacher-produced documents were created outside the confines of this study, a larger number of classroom assessments could have been a data source that had potential to confirm any findings learned from the other two data collection methods (Bloomberg & Volpe, 2016).

For this study, examining how FIP practices were making an impact on instruction, it was important to identify how teachers' classroom assessments were changing with regards to the amount of rigor and mental cognitive demand provided by the assessment items. Norman Webb (2002) developed a four level scale to assign a value of cognitive demand an assessment holds—depth of knowledge. If a student is asked to recall a simple fact or reproduce information based on who, what, when, and where questions, a depth of knowledge level of one is assigned to the item (Webb, 2002). When students are asked to apply a specific skill or concept learned in order to explain how or why something works or happens, a depth of knowledge of two is assigned to the item (Webb, 2002). A depth of knowledge of three is assigned to an item when students are asked to use strategic thinking to solve a problem or answer an item; this typically involves using prior

knowledge and applying it to a new situation in order to create something new (Webb, 2002). A depth of knowledge level four item uses extended thinking answering a multitude of questions regarding a single topic (Webb, 2002).

To obtain classroom assessments, interview participants were asked to share any or all classroom assessments used during the school year. A self-addressed envelope was provided to the participant, allowing them up to a month to: 1) decide to provide assessments, and 2) gather assessments for submission. An advantage for having an assessment evaluated for levels of rigor would be to learn about the cognitive demand students were experiencing during a regular classroom assessment. Any teacher providing assessments would be provided with the item depth of knowledge for each item on the assessment, if they requested it.

Population

This study took place in a large urban school district in the southeast region of the United States. For the purpose of this study, the name of the district was called Burkett Public Schools. Burkett has a current student population of 179,123 students. The student demographic breakdown is as follows: 3.7% Multi-Racial; 10.3 % Asian/Pacific Islander; 24.2 % Caucasian; 29.7% Hispanic; and 31.7% African American. Students participate in the following service programs: 29,092 students (16%) are served in an English Language program; 21,786 students (12%) are served through Special Education services; 24,833 students (14%) are served through Gifted and Talented services; and 102,074 students (57%) are currently receiving a free or a reduced lunch rate.

There are approximately 23,000 employees in Burkett Public Schools. There are over 1,900 new teachers hired for the 2016-2017 school year. On average, a teacher in Burkett Public Schools has obtained a master's degree or a higher advanced degree. In addition, the average teacher also has 14 years of teaching experience.

The district hosts 137 traditional school facilities, two technical high schools, two alternative middle/high schools, and two specialty high schools. While it would be interesting to conduct this study across all schools in the district, only a few schools met the self-imposed purposeful criterion sampling requirements of: 1) participating in a voluntary administrative cohort professional learning course with exposure to the Formative Instructional Practice modules and 2) implementing the five-part module professional learning series in the school (Suri, 2011). District level access to the Battelle for Kids learning management system identified thirty-one schools as potential study locations.

These thirty-one schools had more than ten accounts in the system and participants completed at least one of the five learning modules (Table 2). Additionally, it is important to note that three of the potential high schools were highly encouraged to incorporate formative instructional practices in classroom. Narrowing the study focus to these schools allowed the researcher to conduct focus groups and interviews with teacher participants who have some knowledge of the instructional practices present in the FIP modules. The participants could provide valid opinions and perspectives on the topic of formative instructional practices and student achievement. Inclusion of the schools provided a meaningful discussion needed to answer the proposed research questions.

Table 2 - Thirty-one identified schools for potential involvement in the research study

School Name	Student Population	Leadership Team Members	Prospective Teachers	FIP Module Accounts
High school A*	2182	10	22	32

High school B*	3302	15	39	160
High school C	3748	13	41	18
High school D*	3802	12	39	212
High school E**	3258	12	29	26
Elementary school F*	1311	4	18	81
Elementary school G*	793	5	6	46
Elementary school H*	609	4	2	17
Elementary school I*	1105	4	7	24
Elementary school J	1350	4	11	54
Elementary school K	893	3	9	46
Elementary school L	704	2	10	38
Elementary school M	941	3	8	54
Elementary school N	1222	4	3	25
Elementary school O*	1600	7	6	28
Elementary school P	970	4	3	45
Elementary school Q*	1208	7	3	24
Elementary school R*	1133	4	4	32
Elementary school S*	1042	5	3	25
Elementary school T*	1122	5	4	30
Elementary school U*	1163	4	4	30
Elementary school V	809	3	13	51
Elementary school W	771	3	2	18
Elementary school X	682	3	2	16
Elementary school Y	1007	2	2	17
Elementary school Z	961	3	8	21
Elementary school AA	925	3	4	31
Elementary school BB*	1301	5	19	87
Elementary school CC	1259	4	19	63
Elementary school DD	909	4	11	66
Elementary school EE	901	2	16	55

**Designates that this school has a high poverty student population*

***Provides instruction using an eight period block schedule with a year of instruction taking 18 weeks*

Participants

The participants in this study were the teachers of Burkett Public Schools, specifically language arts teachers at the elementary and high school level. Of the currently 25,333 teachers employed in the district, 11,543 work directly at the high school level. Of these 445 are teaching a variety of high school language arts courses. Courses offered in the district range from college preparatory 9th grade Literature and Composition to Advanced Placement (AP) Literature and Composition courses that require additional certification for instruction. Reviewing the teaching staff at the five high schools in the district identified a potential study population of 170 teachers who were eligible for an invitation to participate in the study.

There were 9,664 teachers working directly with elementary school students. These teachers generally taught four core subjects to their students, which included language arts. Reviewing the teaching staff of the elementary schools in the district identified a potential study population of 1,178 teachers who were eligible for an invitation to participate in the study. Morgan (1997) suggests that researchers invite as many prospective participants as possible to be involved in the study, to allow for an adequate sample size in the study. Therefore, all teachers who qualified to be a participant were asked to participate. In addition, all leaders of the thirty-one schools who qualified to be a participant were also invited to participate in this study. A leader is defined as someone who is either a principal or an assistant principal in the school district. All study participants were required to have working knowledge of at least one of the Formative Instructional Practices (FIP) modules to participate in the study.

Though language arts was the curriculum chosen for this study, this study could be conducted using another curriculum area. For this instance, language arts was selected because the researcher had abundant experience with this subject matter and assessment development practices.

Participants interested in contributing their knowledge for this study would assist in future professional learning opportunities provided by the district and use of formative instructional practices as an approved, vetted learning framework for the district. Information shared in both focus groups and interviews will add to the collective knowledge of all study participants. In addition, any teachers that provided their classroom assessments for depth of knowledge review learned about the level of rigor for their assessments.

Sample Selection

Focus group and interview participants were selected through criterion sampling (Suir, 2011). Criterion sampling is completed when the researcher explicitly states the specific criterion used to select the study participants (Suir, 2001). The criteria selected to identify eligible teacher participants included: teaching language arts courses at either the high school level or the elementary level and having familiarity with Formative Instructional Practices (FIP) by completing at least one FIP module documented in the Battelle for Kids learning management website. Eligibility for leader participants included participation in one of the districts FIP cohort groups and developing a FIP implementation plan for the associated school.

Focus Group and Interview Protocols

A detailed explanation of *who*, *what*, *when*, *where*, and *how* involved with focus groups and interviews was explained in previous sections of this chapter. However, what still needs to be explored are two research study aspects: trustworthiness and ethical considerations.

There are several considerations to establish trustworthiness for a research study: credibility and transferability (Shenton, 2004). Credibility for this study was established through the adopted,

chosen qualitative research methods (Shenton, 2004). The use of focus groups, interviews, and document analysis is an accepted method of collecting data in a qualitative study. Furthermore, the researcher is familiar with the culture, policies, and procedures of the organization where the study took place (Shenton, 2004). While the study proposal included the use of purposeful sampling to acquire personal insights of study participants, the actual focus group and interview participants were random, which provided a multiple perspective for the studies purpose (Shenton, 2004).

Triangulation of data collection through focus groups, interviews, and document analysis offered an opportunity to cross-reference the evolving themes and illustrate how formative instructional practices were being used in the district (Shenton, 2004). Trustworthiness of participants should also be considered; for that reason, the researcher understood the importance of providing an environment that would allow for honest conversations (Shenton, 2004). Moreover, participants understood that they had the right to drop out of the study at any time (Shenton, 2004). The ability to transfer the findings of this study to larger populations is limited, as this study incorporates the opinions and beliefs of the participants working in a specific school district (Shenton, 2004). However, with the descriptions provided in this dissertation, future readers will be able to determine to what extent findings from this project could be transferred to other settings (Shenton, 2004).

Ethical considerations for this study included the credibility of the researcher, which is based upon the individuals training, personal presentation, and current experiences (Merriam, 2009). While the researcher's training in conducting research has been limited, the researcher's background provided the necessary experience that was an invaluable asset to this study. During the six years of work in an assessment office as a test developer of language arts assessments, the researcher acquired both the knowledge and application of Norman Webb's Depth of Knowledge

levels (2002) in addition to the understanding of how a valid and reliable assessment should be developed. The experience as a former classroom teacher and local school leader offered the researcher valuable background experiences, to which both leaders and teachers involved in focus groups and interviews could relate. The participants in this study were unknown to the researcher and provided an additional assurance that bias would not be introduced into the study (Merriam, 2009). The policies, guidelines, and code of ethics provided by the federal government, which protect participants from harm, were followed using the researcher's ethical practice of high values and ethics (Merriam, 2009). These are qualities that provide the researcher with the integrity to carry out a research study in an ethical manner (Merriam, 2009). Finally, the following research study elements were considered when designing this study: providing a purpose for the study with all participants; assessing the risks involved for this study; abiding by confidentiality boundaries stated in this chapter; obtaining informed consent by all parties outlined in this study; ensuring data access is secure; and consulting with the committee chair and district advisor if any ethical matters are presented (Merriam, 2009).

Data Collection

Data collections were completed through the use of focus groups, interviews, and document analysis. Explicit detail for how the data were collected has been explained in previous portions of this chapter. In selecting dates for focus groups and interviews, attention to district leave dates, testing calendar, and religious observances was considered. Scheduled dates for focus groups and interviews were:

- Thursday, February 2, 2017 – local school leadership participants: Focus Group
- Thursday, February 16, 2017 – teacher participants: Focus Group

- Thursday, March 3, 2017 – local school leadership participant: Interview
- Tuesday, March 7, 2017 – local school leadership participants: Focus Group
- Thursday, March 9, 2017 – teacher participants: Focus Group
- Wednesday, March 15, 2017 – teacher participant: Interview

Teachers used the scheduling link included in their teacher participant letter to select their first and second choices for meeting dates. The researcher then formed groups based on teacher requests and notified teachers via their preferred contact method regarding their scheduled meeting date. At the end of all the sessions, each audio recording file was downloaded and named in a secure laptop requiring a unique log-in and password for access. Once named, the audio file was then submitted for transcription with a third party vendor. Transcripts were available for any participant to review, if requested (Bloomberg & Volpe, 2016; Brinkmann & Kvale, 2015; Denscombe, 2011; Kleiber, 2014; Merriam, 2009; Morgan, 1997).

At the conclusion of each teacher session, a request for classroom assessments was made (Shenton, 2004). If teachers volunteered to provide the researcher with their classroom assessments, a self-addressed envelope was provided. An appeal to send in the assessments within one month of receiving the envelope was made. Once the assessments were delivered, each form was catalogued, and all items were marked with the appropriate Depth of Knowledge (DOK) value (Webb, 2002). These same assessments were shared via secure FTP server with an assessment expert for member checking. The assessment expert reported back their feedback on the DOK values to the researcher through the same secure FTP server connection.

Data Analysis

Once the transcripts were returned from the third party transcriber, the researcher began the analysis process. Coding considerations included the ability to compare all six transcripts to one another in order to identify emerging themes through the data (Brinkmann & Kvale, 2015; Kleiber, 2014; Miles, Huberman, & Saldaña, 2014; Saldaña, 2016). First, all materials accumulated from the sessions (e.g., transcripts, field notes, recordings) were brought together and organized (Merriam, 2009). Transcripts had thorough multiple examinations with particular attention given to In Vivo and process codes (Brinkmann & Kvale, 2015; Morgan, 1997). The goal was to develop categories, which identified the experiences and opinions of the participants (Brinkmann & Kvale, 2015; Miles, Huberman, & Saldaña, 2014; Saldaña, 2016). The results of one transcription analysis were then applied to the remaining transcripts (Morgan, 1997). The transcripts were reviewed several more times to identify if specific themes were present across all sessions—analytical coding (Brinkmann & Kvale, 2015; Morgan, 1997). In addition, if a group participant discussed a topic at length, it was a good indication that they found this particular topic interesting (Morgan, 1997). Using this process, information was gathered, organized, and sorted before cross analysis was conducted (Merriam, 2009).

To complete the document analysis, the researcher assigned a Depth of Knowledge (DOK) value for each item on a submitted assessment by writing the DOK value next to the assessment item. After each item on the assessment was evaluated, the assessment was shared with an assessment expert using a secure File Transfer Protocol (FTP) server. The DOK values were validated by an assessment and DOK expert. Once the researchers DOK values were checked by the assessment expert, each test had the percentage of DOK 1, DOK 2 and DOK 3 items written at the top of each assessment. DOK 4 was not identified on the classroom assessments for the reason that

they were not constructed using this level of cogitative demand. These percentages were listed in a table where the researcher would then look for common themes across all assessments.

The expert's qualifications to complete such a task include experience working at the State Department of Education, as an Executive Director in Assessment for Burkett Public Schools, and serving as the Associate Director for an assessment center. The confidentiality of the assessment writer is only known to the researcher. In addition, all assessment item content continues to be the property of the assessment developer.

Reporting Data

When the third party transcriber and the assessment expert completed their respective tasks, the focus group and interview transcripts, including the classroom assessments, were stored on a secure server, accessible through a secure network log-in. If the focus group or interview participants wished to review their transcript, an appointment with the researcher was scheduled, ensuring the confidentiality of the study's participants. If the teachers requested the depth of knowledge levels from their classroom assessments, a report was provided to them. After the study concluded and all data analysis was complete, the transcripts and classroom assessments associated with the study will be stored for one year before they are destroyed. The wait time of twelve months was established to insure that the data are not needed for any reason. For presentation of the findings from the study in the subsequent chapter of this dissertation, the use of a narrative was used to illustrate the themes in the data. The major findings learned from the transcript and document analysis were then organized by these major themes.

Item Analysis

The following chart includes the questions used to collect data from the study participants involved in focus groups and interviews. The semi-structured questions are cross-referenced with the specific research used in the literature review in addition to how the question refers back to the study research questions.

Item	Research	Leader or Teacher Question	Research Question
1. How was Formative Instructional Practices (FIP) training implemented in your school?	Steadman (1998) Wiliam, Lee, Harrison & Black (2004) Hattie & Timperley (2007)	Leader and Teacher Question	What are teachers and leaders perceptions of Formative Instructional Practice (FIP) implementation?
2. One aspect in the research about FIP is that there is a disconnect between student course performance and student performance on standardized assessment. What are your observations?	Leigh (2010) Yu & Li (2014) Afitska (2014) Reed (2015)		
3. Will you continue to use FIP in your school/classroom? Why or why not?		Leader and Teacher Question	
4. Which FIP module have you gained the most information to enhance your classroom instruction and why?		Teacher Question	
5. How comfortable are you in your abilities to deconstruct standards and develop clear learning targets? Incorporate strengths and challenges in your response.		Teacher Question	

6. How comfortable are you in your ability to collecting evidence of student learning and analyze the evidence? Incorporate strengths and challenges in your response.		Teacher Question	
7. How comfortable are you in your ability to providing effective student feedback? Incorporate strengths and challenges in your response.		Teacher Question	
8. What motivated you to learn more about Formative Instructional Practices?	Kusurkar, Croiset & Ten Cate (2001)	Leader and Teacher Question	How do teachers and leaders perceive that the use of Formative Instructional Practices (FIP) contributing to the development of student motivation?
9. How has the implementation of FIP impacted student motivation in your school/classroom?	Brookhart & Durkin (2003) Stefanou & Parkes (2003) Clark (2012) Harrison, O'Hara & McNamara (2015)	Leader and Teacher Question	How is the implementation of Formative Instructional Practices (FIP) assisting teachers in the development of classroom assessments for students?
10. How has your implementation of FIP changed how you develop classroom assessments?	Shepard (2008) Slater, Davies & Burgess (2009) Rawlins (2010)	Teacher Question	
a. As a result of implementing FIP, have you observed that the level of rigor or cognitive demand has changed on your classroom assessments?	<i>Document analysis of classroom assessments will also help to address the coordinating research question.</i>		
11. What additional training is needed for FIP implementation?	Pardo del Val & Martinez Fuentes (2003)	Leader and Teacher Question	What factors impact teachers' motivation to change their classroom instructional practices?
12. Has your participation in FIP professional learning changes your perception of district assessments? How?	Berkovich (2011) Hollingworth (2012) Frey & Fisher (2013) Berhe & Embiza (2015)	Teacher Question	

13. What have been the challenges of implementing FIP?	Leader and Teacher Question
a. If you were designing the implementation plan, what would you change about the way you experienced this professional learning?	

During a session, additional questions became necessary to further explore a participant's response, as required by a semi-structured interview format (Merriam, 2009).

Researcher's Statement

Student performance on district assessments was the initial spark, which began this dissertation research. During the past six years, I have been the developer of language arts district assessments. The evaluation process used as part of the assessment development process required me to listen carefully to teacher and school administration criticism of the assessments. Two key criticisms were: the assessments were too hard and the content was not valid, which resulted in poor student performance. All of these experiences have led me to ask: *how can student achievement improve on district assessments?* In order to answer the research questions and to gain an understanding of why teachers feel as they do towards assessment in general, I selected this qualitative approach to study this issue. While I may display a passionate voice for the topic, the accumulation of knowledge regarding the use of Formative Instructional Process (FIP) can only come from informed, true participants—teachers and leaders working in local schools (Guba & Lincoln, 1994).

In contemplating how my values and beliefs could impact the results of a study, it was important to examine my position regarding my personal epistemology, axiology, and ontology. My subjective point of view coupled with the relationship between me and the study participants served

as a basis for gathering information and allowed me to distinguish between the participant's beliefs and opinions (Teddlie & Tashakkori, 2009). When developing focus group questions, interview questions, or making decisions on what Webb (2002) Depth of Knowledge (DOK) value to place on an item, my values play a role in the study; therefore, a value bound inquiry axiology was used (Teddlie & Tashakkori, 2009).

Sharing my background and experience, along with my beliefs, allows the reader to identify the context in which the results have been analyzed and reported. For this study, my experiences and beliefs helped in guiding what is noted to be of importance regarding the collected data as well as provided credibility for the study results. Regarding the existence of one reality or one universal truth, I considered how each individual experiences the world in their particular context as they are developing new meaning (Teddlie & Tashakkori, 2009). My past social interactions with others around me in my work environment have helped to develop my professional maturity and shaped my individual belief system.

I am proud to work for the school district for which I have been employed for 28 years. While my personal bias toward my school district could interfere with the decision making process while analyzing transcripts, my values/morals will not allow me to participate in false representation of the data. Additionally, my personal bias toward the use of Formative Assessment Practices in the classroom could also interfere when completing the data analysis for this study. However, the use of member checking will assure valid data results coupled with my value statement above. How can I make such statements? I take great pride in knowing that I will do the right thing, even when no one else is watching. In addition, the vivid descriptions used in this chapter provide examples of my transparency and professional character.

Summary

Developing a research design should take into consideration the study's methodology as it pertains to the identified research questions. With the purpose of identifying individual perceptions and experiences from teachers and leaders of Burkett Public Schools, a qualitative approach was selected and described, which included three different modalities for collecting data: focus groups, interviews, and document analysis. A qualitative approach allowed the researcher to become part of the school's journey as Formative Instructional Practices were implemented with the staff thus allowing the researcher to fully understand the events included in the study. In addition, specific detail was provided pertaining to the different protocols used and how the data were collected, coded, and analyzed. It was important to include step-by-step descriptions of the protocols used in the study allowing future readers to understand the environment of the study should transference to a similar situation be desired. Finally, narrative in this chapter provided how the study's findings will be explained in the next chapter. The use of descriptive narrative and tables should provide ample opportunities to understand the study's findings.

Research Confirmation Table

Included on the subsequent pages is the study research confirmation table. The table outlined the major research questions used to formulate the basis of the study's methodology, how the question was analyzed, and how the research strategy answered the question.

Research Question	Instrumentation/Analysis	How will strategy answer research question?
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• What are teachers and leaders perceptions of Formative Instructional Practice (FIP) implementation?	1. Transcripts from teacher focus groups and interview 2. Transcripts from leader focus groups and interview	The qualitative strategy of using focus groups and individual interviews provided the researcher with pertinent dialogue containing both teacher and leaders opinions and beliefs about the impact of Formative Instructional Practices (FIP) on student achievement.
o How do teachers and leaders perceive that the use of Formative Instructional Practices (FIP) contributing to the development of student motivation?	1. Transcripts from teacher focus groups and interview 2. Transcripts from leader focus groups and interview	The qualitative strategy of using focus groups and individual interviews provided the researcher with pertinent dialogue containing both teacher and leaders opinions and beliefs about the impact of Formative Instructional Practices (FIP) and the development of student motivation.
o How is the implementation of Formative Instructional Practices (FIP) assisting teachers in the development of classroom assessments for students?	1. Depth of Knowledge (DOK) identification of items on teacher classroom assessments with member checking	The qualitative strategy of completing document analysis of the DOK level of classroom assessment items provided the researcher with information regarding the level of rigor present on teacher's assessments. The FIP professional learning modules presented teachers with a rational for increasing the level of cognitive demand on classroom assessments.
o What factors impact teachers' motivation to change their classroom instructional practices?	1. Transcripts from teacher focus groups and interview 2. Transcripts from leader focus groups and interview	The qualitative strategy of using focus groups and individual interviews provided the researcher with pertinent dialogue containing both teacher and leaders opinions and beliefs about the impact of teacher's motivation to change their instructional practices.

CHAPTER IV

REPORT OF DATA AND DATA ANALYSIS

As a student completes their thirteen year educational journey, parents hope that their children acquire the knowledge and skills ready for either entry into college or the workforce. Schools have the obligation to help fulfill this unspoken promise and should use all means necessary to do so. One possible instructional framework that could assist in meeting the educational goals for students is the use of Formative Instructional Practices (FIP). Research has shown that the use of FIP has helped increase student achievement (Frey & Fisher, 2013; Harrison, O'Hara & McNamara, 2015; Wiliam, Lee, Harrison & Black, 2004). However, the use of FIP in classrooms has not been implemented at a swift manner or pace in the Burkett Public School District. Therefore, an exploration of teacher and leader perceptions of this instructional framework could assist in future FIP implementation and has also become the basis of this research study. This chapter will explore *who* participated in this study as well as *what* their perceptions were regarding Formative Instructional Practices.

Research Questions

In studying teachers' and leaders' perceptions of how Formative Instructional Practices (FIP) could possibly assist in increasing student achievement, the following research questions were developed:

- What are teachers' and leaders' perceptions of Formative Instructional Practice implementation?

- o How do teachers and leaders perceive that the use of Formative Instructional Practices contributes to the development of student motivation?
- o How is the implementation of Formative Instructional Practices assisting teachers in the development of classroom assessments for students?
- o What factors impact teachers' motivation to change their classroom instructional practices?

Research Design

A qualitative approach was taken to explore the topic of this study. The rationale for selecting a basic interpretive qualitative approach (Merriam, 2009) allowed the researcher to explore the thoughts and actions of both teachers and leaders implementing Formative Instructional Practices into daily instructional routines. After gaining Instructional Review Board permission from both the university and Burkett Public School District, a semi-structured approach for focus groups and interviews, triangulated with a document analysis of classroom assessments, was used to gain the valuable thoughts and perceptions of teachers and leaders. To regulate bias, facial expressions and gestures were controlled so that participants would not provide statements favorable to the researcher. Transcripts of our conversations were transcribed and then coded using In Vivo coding (Saldaña, 2016) to identify participant's beliefs and feelings toward the use of formative instructional practices. Throughout the study, participants had the opportunity to review their statements through member checking, which insured that what they shared with the researcher was truly what they had intended to communicate regarding the topic of formative instructional practices. Classroom assessments were also reviewed for item DOK levels to understand if participation in Formative Instructional Practices professional learning had helped teachers learn how to build more effective classroom assessments.

Respondents

After contacting perspective participants, a total of eight leaders and seven teachers agreed to be study respondents. The leaders represented two different high schools and five different elementary schools while the teachers represented one high school and five different elementary schools. Half of the schools represented in this study are noted as high poverty schools, while the other half are not; therefore, a unique perspective from both views was shared during the sessions. The average years spent in education was 16.3 years, which translated into conversations that contained a wealth of experience. The majority of the respondents were female (80%) with the male respondents 20% of the sample. One teacher taught at the high school level, while the other six teachers taught in the upper elementary grades. All teachers taught language arts classes. As participants arrived for their focus group or interview, they were asked to sign in and select their own pseudonym, which is how they were identified throughout this chapter. The following table displays a demographic breakdown of the participants in this study.

Table 3 - Demographic profile of the respondents

School Code	Job Position	Pseudonym	Education/ Teaching (yrs)	Grade Level Taught	Gender
F*	Leader: Assistant Principal	Gladys	20		F
C	Leader: Assistant Principal	Bear	21		F
Y	Teacher	Amber	2	5 th	F
D*	Teacher	Roger	11	10 th /11 th	M
Y	Leader: Principal	Mary L	25		F
D*	Leader: Assistant Principal	UGA	20		M
C	Leader: Assistant Principal	Chip	9		M
H*	Leader: Principal	Sue	21		F
X	Leader: Assistant Principal	Delaine	26		F

V	Leader: Principal	Elise	18		F
H*	Teacher	Susie	20	4 th	F
H*	Teacher	Mary T	20	3 rd	F
F*	Teacher	Norah	4	4 th	F
G*	Teacher	Gabrielle	10	4 th	F
V	Teacher	Elizabeth	18	5 th	F
N = 15			F = (80%)		M = (20%)
*Designates that this school has a high poverty student population					

Discussion of Themes

Through data analysis, seven themes emerged. These themes expressed teachers and leaders perceptions of how formative instructional practices were effecting student motivation, differentiation of student instruction, leader and teacher expectations, school and district culture, internal struggles, the use of time, and the use of data. In the following narrative, participant's own phrases—displayed in italics—from focus group or interview sessions were selected to tie each theme to the study's context.

Students are in charge of their own learning. This first theme expresses the viewpoint that Formative Instructional Practices have an impact on student motivation in the classroom. When examining research on the topic of student motivation, Brookhart and Durkin (2003) stated that when the content of a lesson or assessment matched the interest of the students, students wanted to learn more about the topic. In addition, other researchers (Cauley & McMillian, 2010; Stefanou & Parkes, 2003) argued that to improve student motivation in the classroom, educators should provide learning experiences for students that emphasize goal mastery rather than performance. McMillan and Hearn (2008) further supported the argument by stating that focusing on goal mastery assisted students with

thinking, self-monitoring, and developing solutions to problems. The end result was that students immersed themselves in their assigned tasks.

In supporting this research, participant Gladys stated that when teachers use learning targets with fidelity,

There is a marked difference in their classrooms of the students knowing what they are doing, what's going on that day, why they're doing what they're doing, and what's going to help them achieve.

This classroom ownership has then translated to students leading their own parent conferences at the school, which then allows students to display their leadership capabilities and begin to advocate for themselves during their conference—even kindergarten students. Students in Gladys' school are given more opportunities to take leadership and ownership of events in the building, and “they feel more power from that.”

During an interview, Mary linked student achievement with student motivation because she felt that “when kids are successful, then that motivated them because once they taste success, they want to keep going.” Her statement really exemplified the research notion that students will immerse themselves into a task when intrinsically motivated.

From a high school leader perspective, Chip shared that in his school the leadership team had seen an increase in student engagement from their classroom walk-throughs, which they would tie to an increase in student motivation. As a kick-off to begin the school year, the principal asked Chip to create a video of student perceptions of learning targets. As he polled students to ask them about learning targets and their viewpoint of formative assessment occurring in class, a lot of students were able to talk about formative instructional practices. Chip stated, “Students felt more comfortable walking into class knowing what they were going to do and almost mentally preparing themselves for

it.” As students spoke about learning targets and formative assessment, the leadership team felt that their stakeholders were telling them “It’s working. Let’s continue it.”

During a teacher focus group and a separate teacher interview, formative instructional practices were noted as having an effect on student motivation; however, there were conditions attached. For instance, Elizabeth shared that she had seen a positive change in student motivation with her use of formative instruction, but she qualified her response when she stated, “If you’re doing it correctly.” This qualifying comment preceded her description of how she incorporated writing workshop during her language arts class using focused mini lessons, checklists for writing, rubrics, and feedback. Elizabeth went on to share that “they become intrinsically motivated because they’ve got learning goals that they’re working toward. My personal workshop rubrics contain a place at the bottom to write their goal and something they’ve need to improve upon.” In the interview, she also emphasized her use of feedback “because you’re constantly giving them feedback; they know every day where they’re at and where they stand.” While all teachers may not be incorporating the use of rubrics, checklist, or daily feedback in their daily instructional practices, from our conversation, “doing it correctly” did echo similar dialogue from previous leadership sessions of implementing formative instruction with “fidelity.”

When asking a teacher focus group about their perceptions of formative instructional practices and student motivation, Susie also offered another condition—the type of class you taught.

I think if I was teaching the gifted class, the higher level class, I think it would be different.

The class I have, my students are just...you know if I say, “You got a 74,” they would say,

“Oh, that’s passing.” They are happy with that.

Susie’s co-worker Mary also agreed and commented that with gifted students, there was more competition not only among other students, but also within themselves; therefore, their belief was

that student motivation was not tied to formative instructional practices but rather the class enrollment of a student.

The data for this theme, *students are in charge of their own learning*, illustrates different viewpoints of the connection between formative instructional practices and student motivation. In general, school leaders were able to provide multiple examples of how students were able to take ownership for their learning and were more engaged in classes. In contrast, teachers voiced conditional attributes between formative instructional practices and student motivation. One important distinction common between the teachers and school leaders was that if formative instructional practices were implemented with fidelity, students would know what was expected of them and would eventually have greater levels of student engagement, leading to higher levels of student achievement.

The second theme, *systemizing to the individual level*, includes the characteristics of differentiation as a tool in the learning process. When teachers incorporate assessment into a teaching framework and use the information gathered from the assessment to alter the instructional progress for students, activities differentiated to a student's ability become sound practices. (Chappius, 2009, Popham, 2008, William, 2011) In other words, when assessment data is used as a learning tool, it can maximize student achievement and provide meaningful learning activities for students. To explain this theme, Ms. Bear tied in the use of learning targets and conversations with her high school course level teams, which began to explain her thought of "systematizing the quality" of what they were getting during a conversation with school leaders. In her high school environment, the leadership team felt as if teachers were comfortable with developing learning targets as well as their importance within the school culture; therefore, using differentiation was the next step for her school to incorporate from the formative instructional process. Using the data they had, and putting it into the

teacher's hands, critical questions became part of teacher planning meetings: How were they using the data? How were they differentiating? How were they grouping? What informed their groups? She shared that it was a work in progress, and Formative Instructional Practices is a huge part of their systematizing down to that individual level. Now her teachers are talking in terms of best practices, developing activities that are student centered, beginning with the end in mind, celebrating success, and building on strengths and successes.

During another discussion with school leaders, Mr. Uga shared that the use of Formative Instructional Practices in his high school not only increased student engagement but also helped to diversify teaching in the classroom. Implementing formative instructional practices was not one more thing for teachers to do, but rather an avenue to change the types of questions that were being asked of students, which then promoted critical and higher-order thinking. In this same conversation, Elise stated that formative instructional practices have allowed her teachers and students in her elementary school to become more aware of the learning continuum and helped teachers to meet the needs of the students and stay on top of the learning process.

Teachers also have favorable thoughts regarding the use of formative instructional practices and using the data to help provide differentiation for their students. Amber expressed that she needed to reach the needs of each student, and they were not all the same because each one thought and learned so differently from each other. As she incorporated formative instructional practices in her elementary classroom, she stated that she was able to meet her students' needs easier.

Roger echoed this statement when he shared that "when we force kids into that one box of learning one way, we kind of hamstring how much they can actually learn." While implementing formative instructional practices had made a difference in his classroom achievement, Roger did recognize that he needed to differentiate more for his high school students.

While teachers and leaders communicated strong beliefs toward the use of differentiation for students, a few teachers did express a desire to experience professional learning activities in a differentiated manner. Roger conveyed that while teachers are expected to differentiate learning for students, why did teachers constantly learn in a “sit and get” fashion? In a different teacher session, Suzie had the same thought as she shared,

I think planning together is very important, and I think all teachers are different. They need to have their own format. I do not teach like the teacher next to me. We teach the same stuff, just in different ways.

As systems move forward with implementing formative instructional practices, or other professional learning activities, serious thought should be given to incorporating differentiated activities for the adults involved in the implementation. After all, if it is an expected practice to use with students, it should then be used with teachers.

The data for the theme *systemizing to the individual level* reinforced the need to utilize differentiated learning activities as part of the formative instructional practice process. Both teachers and leaders discussed in our sessions that data gathered from assessments could be used to provide individualized activities for their students, which was not an additional *thing* to do, but rather an important step in the learning process. Differentiation was what they could do for their students who got it and what they could do for the students who did not get it. In the end, each student is different in how they learn and how they think, so differentiation allows teachers to meet the individual needs of every student. Furthermore, as schools contemplated implementing formative instructional practices into their culture, consideration for providing professional learning in a differentiated manner for teachers should be planned since learning strictly from video modules may not be the best way to provide information.

We all know where we have to go. This next theme addresses the perception that Formative Instructional Practices have a characteristic of expectations and a tie into teacher resistance and professional learning. The Georgia Department of Education provides instruction for teachers on deconstructing standards, identifying evidence of student learning, providing effective feedback, and using assessment results to inform instruction through Formative Instructional Practices online module training. As teachers progress through this online training, a change in instruction for classrooms is beginning to occur. Moreover, as schools use professional learning to assist in leading instructional change in schools, Fullen (1997), Zimmermen (2006), and Knight (2009) stated that school leaders should focus on the fundamentals (curriculum, instruction, assessment, culture) by identifying teaching practices, which are proven and powerful. Mary L echoed this responsibility as she discussed how the formative instructional practice modules provided leaders with “a structure for how to help move your school along and move teams in the right direction.” The learning framework of formative instructional practices has a natural tie into the existing district’s philosophy of teaching and learning. During one of the leadership group sessions, Bear shared,

[Formative Instructional Practices were] working in concert...once everybody kind of just hits that point because it all makes sense. One thing that we’ve really tried to stress all along the way with FIP is that there is nothing in any one of those modules that is new, groundbreaking, and revolutionary. It’s all best practices.

From a leadership point of view, study participants seem to agree that this professional learning opportunity offered teachers a sound instructional framework that provided directions for improvement.

As discussions with teachers occurred, the same sense of expectation unfolded in the conversations. Roger shared that he thought he had the best training as a classroom teacher when he

completed his work with the formative instructional modules and assessment team training. “Things make sense” to Roger because he could now understand how to work questions for his students. In addition, Roger stated that “it made me a stronger teacher and I think my student data has improved because of that.” Roger went so far as to say that if he discontinued his use of formative instructional practices in his classroom that he thought he would not have a job.

Mary T also shared her passion regarding the formative instructional practice modules expectations by sharing that “everybody is on the same road.” She went on to explain,

Whether it is the low of the low kid in my room or the focus [gifted] kids that’s in my room, we all know where we have to go. Everybody is on the same page. We’re all trying to get there. We may get there in different ways, but we all need to know how to add tenths and hundredths. Let’s get there together. That, to me, gives everybody that end goal in mind. Furthermore, regardless of the type of student in a classroom, formative instructional practices is an instructional method that can benefit all students by providing an expectation and direction for learning.

Two teachers provided a word of caution. Elizabeth mentioned that even though she preferred to incorporate formative instructional practices into her classroom, she still had to do what she was told to do or “what was expected in their school culture” hinting that not all teachers have a choice to implement or not.

Similarly, Susie stated, “they [leadership] don’t give us options on a lot of things for a reason. A lot of teachers would choose not to do it” because of the amount of time needed. These statements offer validation that teacher resistance could derail a school’s implementation plan of formative instructional practices if teachers continue to feel as if they do not have a choice in the matter.

Data for this theme, *we all know where we have to go*, suggest that the majority of study participants, both leader and teacher, believe that formative instructional practices provide a direction for instruction and a level of expectation that this framework is implemented. In addition, teachers felt that using formative instructional practices helped them to become better teachers and did improve student achievement. However, a few teachers did share the observation that while implementation was an expectation in their school, school leadership should consider additional ways to increase the level of teacher buy-in and truly get everybody on board.

It's just good teaching. This fourth theme not only embraces the concept of culture evolving at the school but also is an indicator for how leadership teams have cultivated an environment where teachers are expressing the use of Formative Instructional Practices as good teaching. Research provided by Fullen (2001) stated that just sharing an instructional practice to assist in improving student achievement does not immediately translate into buy-in by teachers. It is leadership teams who have mastered authoritative, democratic, associative, and coaching styles of leadership that tend to have the best school climate and have brought a calm to the masses. When teachers express that they have made a connection between learning about a teaching framework and conclude that it's just good teaching, there is a greater possibility that the knowledge learned will actually be used with students.

In conversations with leaders, it was evident that careful examination of the Formative Instructional Practice framework revealed that it was just “best practice” within the culture of the data driven Burkett Public School District. Ms. Bear shared that incorporation of this instructional practice was not something else or something new that they were doing; so instead of using “program-based terms,” her school and others formed a common vocabulary, which did not overwhelm her staff. In this same session, Gladys agreed and suggested that discussions about

formative instructional practices began to change teachers' mindsets, the overall school dialog, and the purpose of the things carried out in the classroom. She stated,

We were all going to do the same thing: take the same test and be assessed at the same point.

It really changed the way we viewed our district assessments. It's changed the way we talk about them as a group. It's changed just the whole culture.

Mary L also commented that as she learned about formative instructional practices through the modules, she recognized the value in the information and decided to incorporate the professional learning content into structures that were already in place like collaborative planning. While teachers around the district were used to posting essential questions from the standards on their boards, it was a natural transition to learning how to deconstruct those same standards in collaborative planning and post learning targets in classrooms for their students.

As Mr. Uga carefully examined the formative instructional practice modules before working with the rest of his leadership team to develop an implementation plan for their teachers, he realized that "this would not be one more thing" for his teachers as he saw the practices shared in the modules as what the teachers were already doing. However, he also shared that it was recognizing that maybe they could do a little bit better as learning targets could become the road map for student learning. Mr. Uga also stated that the young staff members tended to be on board quicker while veteran teachers tended to struggle with changing what they had done in the past. Mr. Uga then concluded with "But ultimately, it is just good teaching."

As leader participants expressed positive attributes of the effects of implementing formative instructional practices as part of their school culture, teachers also shared that they were naturally doing formative instructional practices already. To Elizabeth, she felt as if she was already looking at the standards and what they expected as well as looking at the data from standardized assessments to

identify student strengths and weaknesses, so this was not anything new for her. Elizabeth's statement validates leadership views that formative instructional practices would be a natural progression for established classroom practices.

In a different teacher session, Gabrielle shared her enthusiasm for information learned through her professional learning modules. She said, "I think it's become second nature with deconstructing the standards, which is pretty great. I really want to continue with student ownership of where they are and get kids even more involved in that." This example illustrates the buy-in teachers are feeling for implementing formative instructional practices. Additionally, Mary T stated that she thought the intent across the board was to help teachers be more effective in their classrooms, which brought her evaluation of the professional learning to be "a really good program." If teachers shared that formative instructional practices helped them to become better teachers and inspired them to want to continue, then the leadership teams in their schools accomplished the task of bridging new information with the current culture in their schools.

The data gathered for the theme *it's just good teaching* supports the transition of hearing and learning new information and evaluating it to realize that it is not a new instructional framework, but rather a series of steps to help improve student achievement. When implementing any professional learning endeavor, there will be stronger teacher buy-in when leaders have grasped a convincing, autonomous, and coaching style of leadership, even to the point where teachers comprehend that the new learning fits into their current school culture. Common vocabulary, stronger school planning meetings, and just plain good teaching were certainly valuable concepts learned by these formative instructional practice professional learning participants.

It pains my conscience. While the first four themes supported important educational elements like learning autonomy, a strong instructional direction, and robust methodical practices, the next

theme represents a struggle that teachers have experienced. Struggle can mean many different things; however, in this study, teachers and leaders expressed a struggle with the amount of time spent on learning formative instructional practices and with the lack of knowledge in learning how to build a better classroom assessment. One topic that was consistently expressed between all researchers is the need to have professional learning available for teachers in order to learn assessment practices and components of formative instructional practices (Popham, 2006; Popham, 2008; Stiggins, Arter, Chappuis & Chappuis, 2007; Wiliam, 2011; Wiliam, Lee, Harrison, & Black, 2004). While providing the Formative Instructional Practices professional learning was a step in the right direction, this theme provides valuable insight for future implementation.

Regarding the time spent on delivering the Formative Instructional Practice professional learning to teachers, leaders stated that they learned from their implementation design because they overwhelmed their staff and created a situation where teachers pushed back. Gladys explained that they developed a lofty plan of covering all five modules during a single school year; but it was too much for their staff. To remediate their implementation plan, Gladys stated,

We really stalled out last year as far as our specific look with our study of modules with learning targets. We have spoon-fed parts of the rest of it. We continue to keep a real laser focus on deconstructing the standard, making sure that we have a common understanding of the language, the verbiage, and the standards, collaborating to write learning targets.

In a different leadership session, Delaine discussed the difficulty in getting teachers to teach and assess the full range of the standard. She explained that through her classroom observations, one teacher could reach higher levels of thinking; however, in a classroom next door, the same thing was not happening. “So why did that teacher think of it one way and another teacher think in another

way? They were all looking at the same standard,” remarked Delaine. If teachers could not teach to the range of the standard, then how could they begin to assess the standard?

While leaders were hoping to complete the module series in a single school year, teachers expressed the wish for a different implementation plan. When speaking to teachers about the implementation of their professional learning, Gabrielle said that while the content was very interesting to her, she felt rushed through the process. She wanted time to really learn and digest the information, so a slower pace would have been beneficial. Gabrielle explained, “It was kind of like throwing a lot of information at you. I think I could’ve gotten even more out of it had I had more time.” Other teachers in this same session said that additional practice would have been helpful to really understand the elements of formative instructional practices.

One of the benefits of learning about formative instructional practices is gaining the knowledge of basic test development; however, this was one area that teachers expressed strong opinions. For instance, Elizabeth acknowledged that students are being asked to transfer their knowledge about a topic to a new situation on an assessment; therefore, classroom assessments needed to prepare students to be able to answer those types of questions. Teachers like Gabrielle and Mary T agreed. Gabrielle thought it was very difficult to learn how to change the way a question was worded, so additional opportunities to learn how to accomplish the goal would be helpful. In the same session, Mary T said,

I think that taking a [DOK] level-1 question and turning it into a [DOK] level-3 makes the question different. How do you do that? It would have been nice to know because I don’t know if the reading test I create have the DOK levels that we need.

Some teachers felt as if they could write a better assessment question after completing the professional learning. Both Amber and Roger stated that they now understood how to work questions and felt as if they could write stronger test questions.

Data from the theme *it pains my conscience* discussed concerns with overall professional learning implementation as well as complications with assessment item construction. Leader participants wanted to present all portions of formative instructional practices to their staff so that students could quickly benefit but in doing so created a timeline that did not allow for practice of newly acquired knowledge. In addition, while teachers understand that students need to be able to apply information, creating opportunities to do so on an assessment is easier said than done. Standardized assessments require students to think deeper so teachers need to learn how to develop common assessments that will provide students with that type of practice. After all, teachers are there to do what is best for the kids.

While the last theme provided some discussion about the concept of time, a sixth theme, *take baby steps*, provides additional future formative instructional practice professional learning implementation recommendations. Time is an important commodity in a school setting — wasting it will not benefit anyone. While the last theme provided some discussion about the concept of time, the sixth theme provides additional future formative instructional practice professional learning implementation recommendations. While professional learning can be a catalyst for instructional change, Fullan (2001) reminds us that by allowing time to embrace and build capacity for the change, educators will become committed to the change needed to solve a school's complex problem. In addition, professional learning should focus on a few critical instructional practices with embedded elements of teacher collaboration, coaching, and time for practice (Fullen, 1997; Knight, 2009; Zimmermen, 2006). Therefore, it is natural to understand why schools recommended pursuing a

formative instructional practices professional learning implementation design in a baby step manner after an initial implementation experience.

From a leadership perspective, Gladys spoke about the amount of time needed to complete the five modules. So it is important to take time into consideration when designing an implementation design. For her school's second year of implementation, they rolled out the new learning in bits and pieces—manageable bite-size pieces—and did not necessarily label the endeavor with Formative Instructional Practices. The discussions about the concept were valuable for her staff, which led to a fairly simple roll out. Gladys then emphasized “We’re doing it in very small stages that they can bite without doing a lot of whining and complaining, and trying to put those hooks in there for them.” At the elementary level, Elise explained that her school's implementation plan consisted of focusing on one module each month with a follow-up activity that touched upon key concepts and points. The important part of her implementation design was the critical conversations around analyzing the standards and student goal setting. Elise's school spent the whole school year going through the modules but then always coming back together to have the reflective conversations and how it looked in classroom practice.

From a teacher perspective, they were exposed to the modules in different ways. Some teachers watched the modules on their own time during the summer or after work, while some teachers expressed that they were in a self-driven course. In one elementary school, after school meetings became the venue when the professional learning was carried out. However, Gabrielle described those meetings as “rushed” and wished she had a chance to review the material at a slower pace.

At another elementary school, Nora described having the opportunity to meet with her grade level every Thursday for an hour and a half Formative Instructional Practice meetings where they

created language arts and mathematics lesson plans and assessments on alternating weeks. Because this meeting took an hour and a half away from actually teaching students, it became critical that the instructional coaches leading the meeting were focused and intentional in the meeting agenda or the teachers saw the opportunity as a waste of time. During this same session, Gabrielle spoke up and said “if you invest the time, in the long run, it could be worth it and potentially could be very beneficial.” She saw the Formative Instructional Practices grade level meetings as a chance to practice what she had learned through the modules, and an opportunity to practice was not available at her school.

Finally, Elizabeth had another observation regarding time. She explained that learning about different types of assessments, that were effective assessments, took time to understand and develop. She felt as if she had ample time to plan engaging hands-on lessons; however, the paperwork requirements of her school pulled her away for the time she needed to plan for effective assessment. In Elizabeth’s community, parents still wanted to see graded workbook pages and sheets, which became a battle that she could not fight over that school year. She and other teachers recognized that there never seems to be enough time to teach all the content; consequently, they teach the surface instead of the standard depth and worksheets become an easy way to get the job done.

The data gathered from the theme *take baby steps* supports researcher’s advice to build in time for practice and time to embrace and build the capacity to implement instructional changes. School leaders cautioned against trying to cover all the Formative Instructional Practice modules too quickly. Time should be set aside to engage in reflective conversations. Teachers then cautioned that when time is taken away from classroom instruction, the activities they complete should be meaningful and building capacity for their new learning. As a final point, while time is needed to

develop engaging lessons and effective assessments, creative ways to use time more effectively could help teachers manage their anxiety for the amount of content that is present to students.

Data is not a bad thing. The last theme represents the way employees of Burkett Public Schools use data to help form instructional decisions. The district provides a variety of data for instructional use, thus making data driven decisions is the norm. Researchers have stated that when data are gathered from assessments for learning, the information can be used to modify instructional practices and increase student learning (Stiggins, 2006; Stiggins, Arter, Chappius, & Chappuis, 2007; Stiggins & Chappuis, 2006). Opinions of the study participants explain that data from assessments is used for two purposes: having conversations and understanding the whole child.

As leadership teams discussed the rationale for implementing Formative Instructional Practices, Ms. Bear explains that a starting point was reviewing classroom data. She explained:

We started to figure out, where are kids failing the most? What classes are they failing the most? Are there teachers that are failing kids more than others? Some tough conversations were had about the rest of your course team having a 2-5% failure rate and you've got a 25% failure rate.

Ms. Bear also noted that leaders were not trying to use data to punish teachers, but rather move conversations to a place where data could be used to help student learning. The conversations eventually lead teams to begin asking new questions like: How are you using data? How are you differentiating your instruction? How are you grouping students to enhance their learning? The examination of data and willingness to participate in reflective conversations eventually lead to using data to adjust instructional practices.

Data are truly viewed as information and tell teachers and leaders about their students and the instruction they are receiving. As teachers review their data in grade level teams, identification of

learning gaps and student strengths are recognized. Elizabeth explained, “If you really know how to use the data, you can understand the whole child a little better.” When students understand what they are learning, and own that learning target, they begin to understand what success looks like and teachers begin to see improvements in their data.

Data from the theme, *data is not a bad thing*, demonstrates how leaders and teachers in the school district view the use of data. In a data rich environment, the data begins conversations about student learning and then becomes a focus for understanding students better. Ultimately, examining information gathered from assessments initiates a modification in instructional practices and teachers begin to see increases in student learning.

Observations from Classroom Assessments

In an attempt to triangulate data generated in this study, the researcher used document analysis and asked if teachers would be willing to share any common or self-created assessments. The purpose in asking to view these assessments was to analyze the cognitive demand of the assessment items. Part of the Formative Instructional Practices modules discussed how to develop a more rigorous assessment, which would eventually help students build up their stamina for a rigorous state summative assessment. As teachers are able to practice what they learned, it is hoped that the percentage of Depth of Knowledge (DOK) items on the assessments would be higher for level two and above.

Two teachers submitted a total of four assessments. One teacher taught fifth grade and the other teacher taught at the high school level. Two assessments were measuring mathematics content and two assessments were addressing language arts content. After receiving these assessments, the researcher read through each assessment and assigned a DOK value to each item. Then the

assessments were shared with an assessment expert to validate the DOK values assigned by the researcher. Though only a few teachers were willing to submit their assessments for a DOK analysis, the following information (see Table 4) was gathered from four assessments.

Table 4 - Depth of Knowledge Percentages of Common Assessments

Assessment Name	No. of Items	Depth of Knowledge %		
		Level 1	Level 2	Level 3
5 th Grade Unit 3 Part 1 Fractions	22	9%	86%	5%
5 th Grade Unit 3 Part 2 Fractions	16	13%	81%	6%
Soph. Rd Summative Assessment	24	4%	83%	13%
Jr. LA Age of Reason Unit Test	32	9%	84%	6%

When viewing the DOK percentages, it is important to note that all of the assessments had more than 80% of the items at a DOK level of two or higher. This is an improvement over assessments previously viewed by the researcher as in the past the majority of teachers created assessments containing DOK 1 items—which in turn did not require students to engage in high levels of mental complexity while taking the assessment. While it is unknown if participation in professional learning activities like Formative Instructional Practices had a direct impact in the additional rigor displayed on these classroom assessments, it is encouraging to see that teachers are learning how to modify their existing assessments for maximum impact in student achievement.

Summary

This chapter presented information regarding the data analysis for this research study. The underlining purpose of this study was to examine the thoughts and opinions of teachers and leaders who had participated in a professional learning course about formative instructional practices. With a student population of over 179,000 students, each student could be a potential benefactor of this

study's themes. Researchers provided multiple rationales regarding the benefits of teachers incorporating formative instructional practices into classroom instruction including increased student achievement. Using a qualitative research study approach by incorporating focus groups, interviews, and common assessment document analysis, several themes evolved from data analysis. These themes were *student ownership* of their own learning, *differentiation* of instruction, *expectations* for the direction of learning taking place in the district, realization that this was just *good teaching*, *struggling* with learning how to develop classroom assessments, the *time* needed to carry out the professional learning, and continued *data* analysis for instructional improvement. A few common assessments were reviewed to determine if the level of cognitive demand had increased due to the participation in the formative instructional practices professional development. While assumptions should not be made from such a small review, the rigor of the assessments had indeed increased from primarily DOK 1 items to primarily DOK 2 and DOK 3 items.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMENDATIONS

This research study was developed to gather the opinions from teachers and leaders regarding the effectiveness of Formative Instructional Practices during classroom. A qualitative approach utilizing focus groups, semi-structured interviews, and document analysis of classroom assessments was used to gather data for this research study. Data gathered were analyzed using In Vivo coding and seven themes emerged, which could assist the school district in future implementation of the professional learning of formative instructional practices.

Interpretation of the Findings

Using In Vivo coding of the participant's remarks, data analysis revealed seven key themes for this research topic. These themes included:

1. Student motivation represented by the phrase *students are in charge of their own learning*—a theme discussing student ownership of what they were learning in the classroom.
2. Differentiation represented by the phrase *systemizing to the individual level*—this theme outlined the importance of differentiation for both students in the classroom and teachers involved with professional learning.
3. Expectations represented by the phrase *we all know where we have to go*—a theme that captured expectations of leadership teams and how that it translated into classroom practice.

4. Culture represented by the phrase *it's just good teaching*—this theme reinforced the culture established in the school district centered on teaching and learning.
5. Struggle represented by the phrases *it pains my conscience*—a theme devoted to the struggles of learning what needs to be completed to enhance classroom assessments and balancing the time available to accomplish tasks.
6. Time represented by the phrase *take baby steps*—this theme discusses how time was used to implement this professional learning activity and lessons learned.
7. Data represented by the phrase *data is not a bad thing*—a theme outlining how schools used data to help guide instructional practices.

Discussion of Research Findings

In preparation for this research study, twenty studies were reviewed for this research and were organized into four main topics. These four topics included classroom assessments; the relationship between classroom assessments and student motivation; the connection linking classroom assessments and teacher resistance; and the bond joining classroom assessment to formative instructional practices. One main research question emerged from these four topics, which encompassed the perceptions of teachers and leaders who participated in a professional learning series on formative instructional practices, along with three secondary research questions involving student motivation, the development of classroom assessments, and teacher's motivation to change their instructional practices. Data gathered from conducting focus groups and interviews revealed the seven themes, which are used to discuss this research study's findings correlating back to the original twenty foundational studies for this research.

Students are in charge of their own learning. A comparison between the twenty studies and this study's first theme revealed three supporting intersections. For example, there are connections between student ownership of their learning, high levels of classroom engagement, and knowing what is expected to the following three studies. The first correlation was to a study conducted by Yu and Li (2014). Eighth grade students participated in group-based self-assessments, which improved their performance on a re-test. In addition, students noted that they found value in group-based self-assessment over individual reviews. The theme *students are in charge of their own learning* resonates with Yu and Li's (2014) study since students are able to make their own decisions regarding the methods they find most helpful when learning. During this research study, school leaders provided examples of how students were able to make decisions and take ownership of their own learning, which resulted in higher classroom engagement when formative instructional practices were used. Consequently, this study supports the finding from Yu and Li (2014) that students involved with their own learning process tend to be more motivated and successful.

The second intersection between the studies' cited in the literature review and this research occurs with a finding provided by Steadman (1998). While exploring classroom assessment techniques used in community colleges, Steadman (1998) noted that students were more involved in their own learning and benefited from improved instruction when their teachers incorporated classroom assessments into their instructional practices. This related to the theme *students are in charge of their own learning* as students knew what was expected of them, just as teachers in this study expressed. When formative instructional practices were implemented with fidelity, students did know what was expected of them and performed at higher levels of achievement. Yet again, this study supports one of the outcomes of Steadman's (1998) work as it related to student ownership of their learning.

The final connection between this first theme and the twenty foundational studies occurred with a reference for a study conducted by Harrison, O'Hara & McNamara (2015). Several of the themes discovered in their qualitative study overlapped with this study. For instance, Harrison, O'Hara & McNamara (2015) stated that exposing students to self- and peer-assessments helped them become effective learners, critical thinkers, decision makers, as well as responsible and accountable learners. While this study did not specifically explore the uses of self- and peer-assessments during instruction, the opinions of teachers and leaders who learned about formative instructional practices expressed that students are more intrinsically motivated because they were working toward their own personal learning goals. Hence, this study supported several of the themes present in Harrison, O'Hara & McNamara's (2015) research.

Systemizing to the individual level. The theme *systemizing to the individual level* contained the concept that differentiation in learning activities helps to meet the individual needs of students. This idea was also similar to the study conducted by Stefanou and Parkes (2003) in their attempt to explore the claim that performance assessment fostered student motivation over multiple choice assessments. Whether an assessment contains multiple choice or performance based items, gathering information to help determine the best course of action for a learning continuum is what teachers strive to achieve. Every student is different in how they learn and how they think; therefore, determining what motivates them to succeed can be helpful in the classroom. While the connection between this study and Stefanou and Parkes (2003) research may not be the strongest, both studies were concerned with meeting the instructional needs of students.

We all know where we have to go. In 2012, Clark reviewed literature associated with the implementation of formative assessment and the degree of which it was used in classrooms. An outcome shared from this review stated that teachers were incorporating portion of the formative

assessment process but not in a consistent manner. The theme *we all know where we have to go* shared the element of consistency with Clark's (2012) work. Both teachers and leaders expressed that implementing formative instructional practices provided a direction for instruction; however, teachers expressed that leadership needed to increase the level of teacher buy-in and get everyone on board with implementation. For that reason, this study supported the outcome shared through Clark's (2012) literature review.

Another connection between studies cited to support this study and the findings previously shared occurred with research conducted by Leigh (2010). Leigh's (2010) study was developed to identify the effect a teacher has on increasing student performance on state exams. A finding shared from this research was that a highly effective teacher was able to accomplish in three-fourths of a year what an ineffective teacher was able to accomplish in a full year. Therefore, leadership personnel strive to have highly effective teachers in the classroom. This finding related to the theme *we all know where we have to go* since teachers expressed that participating in professional learning about formative instructional practice helped to make them a better, more effective teacher. Thus, this study supported the use of professional learning on formative instructional practices to help increase teacher's capacity and effectiveness in the classroom.

The third and final link between the theme *we all know where we have to go* and studies cited to support this research comes from a literature review completed by Shepard (2008). In this review of literature, Shepard (2008) referenced an increase in student achievement results when formative assessment practices were used in the classroom. In addition, Shepard (2008) recommended that states should merge standard based professional learning with formative assessment practices, which would avoid teacher overload of multiple instructional initiatives. In essence, the modules that were used to present formative instructional practices to the teachers and leaders in the Burkett Public

School District did combine standard based instructional with formative assessment practices. For that reason, this study supported the comments made by Shepard's (2008) literature review.

It's just good teaching. There are four intersections between the studies referenced in the literature review and the theme *it's just good teaching*. One of these intersections was between a study conducted by Kusurkar, Croiset, and Ten Cate (2001) where the researchers explained the concept of autonomy-supportive teaching as it related to student motivation. In this study, the researcher found that autonomy-supportive teaching was not difficult to implement into practice and provided twelve tips to assist teachers. A few of these tips included: identifying student needs; providing structure, guidance, and challenges; and giving feedback, choices, and emotional support—also strategies teachers used in everyday effective teaching. In this current research study, both teachers and leaders commented that the use of formative instructional practices was nothing more than a series of steps to help improve student achievement. Thus, this study supported the finding stated by Kusurkar, Croiset, and Ten Cate (2001).

The theme *it's just good teaching* also encompasses the use of a common vocabulary among practitioners. Though the content of the modules was not totally foreign to school staff, it did allow for teachers and leaders to build a common vocabulary, which did not overwhelm their teachers. This concept best linked to a study led by Frey and Fisher (2013) where the researchers discussed how large school systems developed instructional reform strategies to increase student achievement. In the study, Frey and Fisher (2013) stated that development of a common vocabulary was a key ingredient for success implementation. Therefore, this study supported the finding provided by Frey and Fisher (2013).

The third relationship between this research study and the supporting literature review studies was based on the work of Hattie and Timperley (2007). The researchers sought to develop a model of

feedback that would produce the maximum impact on student achievement. One of the outcomes of this study stated that teachers needed to provide effective instruction as well as classroom climate conducive to receiving instructional feedback. While teachers and leaders in Burkett Public Schools were exposed to feedback methodology and implementation in the formative instructional practices modules, educators focused more on deconstructing of standards and matching instructional practices than incorporating feedback to students. Though some teachers did provide instructional feedback when they were able, and they found it to be effective, the majority of participants did not have time to incorporate feedback on a consistent basis. Consequently, this study neither supported nor contradicted the outcome provided by Hattie and Timperley (2007).

The final intersection between this study's theme *it's just good teaching* and the studies used to support this research centers on the question if teachers matter in the classroom. Researchers Slater, Davies and Burgess (2009) developed a study to determine the effect a teacher has on student achievement and the differences in teacher quality among classrooms. One of the findings reported from this study stated that in order to improve student achievement, the average teacher must also grow in their instructional craft. Study participants stated again and again by study participants that learning about formative instructional practices was just plain good teaching as it provided steps for teachers to help improve student achievement. So, if one of the variables to increase student achievement was quality teaching, then this study supported Slater, Davies and Burgess's (2009) work as a way to grow teachers' capacity.

It pains my conscience. One study used to support this study's literature review was conducted by William, Lee, Harrison, and Black (2004) where they examined the effects on student achievement through a professional learning on the principles of assessment and formative assessment practices. A finding of this study determined that teachers improved their use of

formative assessment practices, which in turn increased student performance on General Certificate of Secondary Education administered in England. The theme from this study that most closely related to William, Lee, Harrison, and Black's (2004) study was the theme *it pains my conscience*. After participating in a professional learning activity to learn how to incorporate formative instructional practices in the classroom, teachers shared opinions that they needed more training in item and assessment development in order to meet the cognitive demands of state summary testing. While a few teachers felt that they could write more rigorous assessment questions, the majority of teachers that participated in this study expressed their desire to learn how to write items requiring higher levels of cognitive demand. Therefore, this research study supported the need for professional learning to educate teachers on assessment practices.

Additionally, in a study conducted by Brookhart and Durkin (2003), classroom assessments, student motivation, and achievement in high school social studies classes were explored. One of the findings discussed was that teachers needed to be able to design assessments that allow student ownership, are accomplishable, and are worth the effort of completing. This finding resonates with the theme *It pains my conscience* because teachers in the study expressed the desire to learn how to build better assessments for their students. When teachers have assessment development knowledge, students are then able to meet the challenges of summative assessment practices and then see their efforts worthwhile. For that reason, this research study supported the need for professional learning on assessment development and practices.

As a final point, another one of the studies referenced in the literature review was a study conducted by Reed (2015) to determine how teachers were making data-based instructional decisions. One of the findings from this research concluded that if assessments were to indeed guide student achievement efforts, then the assessment must provide accurate, meaningful information for

the teachers. This finding related to the theme *it pains my conscience* since the information gathered from an assessment can help to drive instruction if teachers understand how to develop an assessment. Teachers shared their strong opinions, several times, that they were unsure that the assessments they created actually provided them with the vital information they needed. Consequently, this research study continued to support the need for teachers to learn how to increase the rigor of their classroom assessments and receive accurate and meaningful information from them.

Take baby steps. The study conducted by William, Lee, Harrison, and Black (2004) involved a longer timeline for high school teachers to learn and practice their newly acquired knowledge. This study's theme *take baby steps* supported the need to present formative instructional practices content in a longer time frame, which would provide teachers with an opportunity to practice what they learned and gain valuable feedback on assessment development. Participants mentioned that they felt rushed and wished that they had time to reflect as they were learning the content of the professional learning modules as they were exposed to all five modules within a single school year. Based on the data analysis from this research, facilitators are encouraged to allow for a long timeline (e.g., one to two modules per calendar year) when offering professional learning about assessment practices, allowing for participants to practice their new knowledge.

Another study linked to the theme *take baby steps* was led by Pardo del Val and Martinez (2003). In this study, the researchers were observing if teacher resistance was higher for a strategic change over an evolutionary change. A finding from Pardo del Val and Martinez's (2003) research stated that the more radical the change the more powerful resistance to the change would occur; therefore, training was critical because it provided communication that eventually overcame teacher resistance. During this current research study, leadership personnel recognized the need to proceed with the professional development training on formative instructional practices at a slower pace,

which would allow teachers an opportunity to reflect and practice their newly developed skills.

Hence, this study supported the finding presented by Pardo del Val and Martinez (2003) stressing the importance of training to help combat teacher resistance.

A third link between the studies referenced in the literature review and this study's findings occurs between Hollingworth's (2012) work in identifying the relationship between leadership and teachers when implementing uses of formative assessment. During the study, Hollingworth (2012) noted that teachers needed the support that came from time provided for reflection and conversations to be successful in their implementation of formative assessment practices. When given this support, teachers enhanced their learning and became more collaborative. The theme *Take baby steps* noted in this study echoes this same suggestion as teachers remarked that they wished they had time to practice and have reflective conversations. Consequently, this research study continued to support the need for teachers to be presented with new information including time to fully embrace the instructional changes and participate in thoughtful discussions.

Finally, there was one study that had a strong correlation with the theme *take baby steps*. Rawlins (2010) directed a study that focused on written and oral feedback provided to students. One of the findings from Rawlin's (2010) work stated that teachers avoided the use of formative assessment because of the time involved to implement it—it is impractical with large class sizes and does not meet the demands of the learning process. Part of this study's theme touched on the amount of time it took to develop engaging hands-on lessons including the amount of time it takes to develop an effective assessment. Therefore, this study does recognize the time involved in implementing formative instructional practices though it does not support the claim that using formative instructional practices does not meet the demands of the learning process.

Data is not a bad thing. The theme *data is not a bad thing* contained the concept that data helped to begin the conversation of student learning. This idea was contrary to a comment from a review of literature conducted by Afitska (2014). This review was completed to find the relationship between formative teacher assessments, self-assessments, and peer-assessments and the development of classroom assessments. It was noted that teachers were still struggling with how to interpret data gathered from assessments. In opposition to this comment, the teachers and leaders in this study had positive views of data as they relied on assessment information to identify instructional corrections that needed to occur. Therefore, this finding did not support the idea posed by Afitska (2014).

No correlation. There were two studies listed in the literature review that did not have a connection with this research study. The first study was conducted by Berkovich (2011) to examine the setting strategies used by teachers as they oppose national policy. While this study spotlighted how teachers might behave during a period of resistance, the major finding that agendas and web postings influence a political movement had no correlation to any of the themes developed during this study. In addition, a study led by Berhe and Embiza (2015) was developed to explore the use of continuous assessment at the post-secondary level and found that both student and teacher's knowledge and attitudes of assessment were poor. Students commented that assessments were administered even though the majority of students had not mastered the content, and teachers complained that their classes were too large to incorporate continuous assessment practices. Again, the link between Berhe and Embiza's (2015) work and this current study did not support each other.

Addressing Research Questions

The main research question for this study was, what are teacher's and leader's perceptions of Formative Instructional Practice implementation? After reviewing the seven data analysis themes, a

conclusion regarding teacher's and leader's perception of the Formative Instructional Practice professional learning endeavor is mostly positive—the first four themes presented from this research are positive. Though cautions were raised and recommendations were shared, overall, participants view the knowledge learned from the experience as a good thing that will help them become a better classroom teacher and school leader.

From the secondary questions, the question of how do teachers and leaders perceive that the use of Formative Instructional Practices contributes to the development of student motivation was written. The tie-in between student motivation and the use of formative instructional practices was favorable as teachers and leaders concluded that the use of these practices did effect student motivation in a positive manner. The next question for this study was, how is the implementation of Formative Instructional Practices assisting teachers in the development of classroom assessments for students? This question links formative instructional practices to the development of teacher's classroom assessments. The evidence to answer this question is inconclusive. While teachers asked for more information on learning how to write assessment items, most of them had only studied the first two or three modules. Assessment development content is not presented to teachers until later in the module series. Finally, the last question developed for this study was, what factors impact teachers' motivation to change their classroom instructional practices? Some of the teachers shared that they had totally changed their instructional practices based on what they had learned; if they were to revert back, they thought they would be fired. Some teachers still did not have the time to fully implement these instructional practices. While teachers like what formative instructional practices can do for their students, the steps involved in this instructional practices are not implemented with fidelity to its fullest intent. Therefore, the results for this question are also inconclusive.

Research Findings and Conceptual Framework

The conceptual framework provided for this study displayed a relationship between the concepts of Formative Instructional Practices (FIP) and Student Achievement. With data collected from focus groups and semi-structured interviews, participants shared that they felt student achievement increased when formative instructional practices were implemented into regular classroom practices. In each session, both teachers and leaders shared that student achievement increased when formative instructional practices were used. One participant, Roger, felt that the link was so strong, he referenced that it made him a better teacher. He stated that his student achievement data improved because of implementing formative instructional practices.

Data gathered from this study also supported the relationship between student motivation and student achievement. The theme *students are in charge of their own learning* represents the conversation provided by participants as it related to student motivation. Teachers using formative instructional practices with fidelity had students who knew what they were doing, why they were doing activities, and how it was going to help them achieve in the classroom. Additionally, data collected from this study reinforced the relationship between formative instructional practices and teacher resistance. The theme *it pains my conscience* outlined the struggle teachers had between the time spent on learning the concepts and their lack of knowledge in learning how to develop better classroom assessments. While these struggles did not fully match the components of outright teacher resistance, participants mentioned that leadership needed to work on methods to get all faculty on board with formative instructional practices implementation.

Lastly, the conceptual framework displayed a relationship between student achievement and classroom assessments. The links between these two variables was evident as teachers discussed their desire to learn additional ways to improve classroom assessment items because they felt as if their

assessments were not assessing what they really needed to assess; therefore, they did not have the full scope of what a student knew or did not know regarding the standards.

Study Limitations and Trustworthiness

There were three limitations provided for hosting focus groups and interviews, which were a noisy location, equipment failure, interviews being cut short, and time needed to conduct effective focus groups. Thankfully, none of these limitations actually transpired during the research study because focus groups and interviews were held in a quiet conference room after the conclusion of the school day with multiple recording devices running. However, the following limitations did affect this study:

- Few classroom assessments were submitted from participants
- A small number of participants were willing to participate in this study
- Findings not generalizable to a larger population
- The art of teaching contains many uncontrollable variables
- Student achievement contains many uncontrollable variables

It was difficult to convince teachers and leaders to not only participate in this study but then to actually submit any classroom assessments for document analysis. There were many personalized email requests made in an attempt to gain study participants; yet, for whatever reason—time constraints, unfamiliarity with researcher, or busy schedule—only a small number of the eligible participants agreed. Thankfully, eight leaders and seven teachers responded and became participants. The same rationale holds true for receiving classroom assessments. Out of the seven teachers, only two provided assessments for analysis. Teachers may have forgotten, were apprehensive, or just did not have time to provide an assessment for this study.

The remainder of the limitations were still a concern for this study. The themes provided for this study's qualitative data analysis could be generalized to a population with similar demographics and cultural elements, which would be difficult to replicate. In addition, teaching contains many uncontrollable variables—individual student needs, resources, teacher capacity, leadership vision, and school culture, as well as student achievement also containing many uncontrollable variables—student ability, family engagement, social-economics, and student motivation. While there is not a proven recipe for enhancing instructional methods or increasing student achievement, formative instructional practices should be considered as a valuable tool for a teacher to use in the classroom.

Recommendations for Future Research

While this study shares the benefits of implementing Formative Instructional Practices professional learning in a large urban school district, the following three questions could become the basis for additional inquiry:

1. Why are schools only focusing on standard deconstruction?
2. Can time in the classroom be structured to provide students with instructional feedback?
3. How can better classroom assessment affect student achievement?

As the focus groups and interviews were conducted, time and time again the participants discussed how learning about formative instructional practices was not something new but in reality just good teaching practices that occurred in great classrooms. Therefore, the conclusion of teachers and leaders perception was that they felt very comfortable with deconstructing the standards and matching instructional activities to those standards can be made. However, deconstructing standards and identifying proper learning activities is just the beginning of formative instructional practices.

While schools need to consider a timeline for presenting all five modules to their facilities and staff members, it would be very interesting to learn why the schools involved with this study stop formative instructional practice implementation at standard deconstruction level.

In addition, researchers such as Chappius (2009), Stiggins (2006), and Wiliam (2011) state from their research the power of providing students with instructional feedback. When students learn about how well they are learning a concept and what they can do to make it better, student achievement improved. For busy teachers with numerous standards to cover in a single school year, it would also be very interesting to learn how time could be structured to incorporate providing feedback to students. Is providing instructional feedback—beyond a grade assigned to a paper, project, or a test—to students a realistic endeavor when teachers have large numbers of students in classes with more than enough curriculum to cover in a school year?

Another interesting phenomenon that occurred during the study was the request by teachers to learn more about assessment development. It was evident that the teachers involved in the study had enough knowledge to know the differences in cognitive demand an assessment item could obtain. However, time and time again, the teachers craved to learn how to modify their tests and items to bring about more rigorous thinking with their students. Though the Formative Instructional Practices modules provided teachers with some knowledge regarding assessment development, this study offers the perceptions from teachers that additional learning is needed. So, if teachers were able to learn more about best practices in assessment practices, how could a better classroom assessment affect student achievement?

Implications and Impact for Practice

Looking forward, there is one major implication, which arises from this study, and it is to continue providing professional learning to teachers and leaders on the topic of Formative Instructional Practices. Based on the first four themes emerging from this study, schools that participated in this study have experienced positive changes in their schools and classrooms. As discussions about the district assessments took place, teachers and leaders shared how the data from the assessments were the building blocks of strong instructional conversations in their schools; therefore, the negative connotations of the district assessments were beginning to change, and the time spent in administering the assessments was perceived as beneficial. While there are many different variables that can contribute to a school's success, the thoughts and opinions of the participants in this study reflect their positive belief that formative instructional practices is a viable tool in their instructional arsenal.

Regarding how to improve the current practice, the following two recommendations are offered. First, teachers and leaders believed that a focus on no more than two modules per year provided more teacher buy-in because the slower time frame allowed for teachers to practice what they had learned, participate in reflective conversations, and take part in collaborative planning sessions. In addition, schools should provide time during the regular school day to continue collaborative conversations and for practice of formative instructional practices. While schools have guided teachers in how to deconstruct standards and align instructional activities for student learning, modules focusing on providing student feedback and developing assessments should not be excluded. For these reasons, a strong recommendation to provide professional learning over a substantial amount of time is recommended.

Furthermore, teachers who took part in the professional learning on formative instructional practices asked for further professional learning on assessment development practices. While the teachers had a cursory knowledge base regarding item rigor, assessment development practices would be a logical next step for these participants. In providing such an opportunity, teachers could enhance their classroom assessments and truly learn what students have learned and are capable of doing and increase their overall student performance when it comes to completing the summative state assessment. Hence, another strong recommendation would be to provide additional professional learning—part two so to speak—on practices associated with the development of a classroom assessment.

Study Conclusion

There are many different instructional strategies available for teachers for developing their lesson plans and to meet the needs of the complex learners in their classrooms. For example, teachers may select the gradual release methodology, a learning focus framework, or even formative instructional practices to build their daily instructional practices. From all the research-based options a teacher could select, how do teachers and leaders select the best option to implement in their particular classroom environment? With only 180 days of classroom instruction available, how do teachers pick the best instructional practice allowing for maximum student growth?

While there is not a magic recipe to guarantee an increase in student achievement, there are choices that can be made that can generate student success. This research study was designed to gather the thoughts and opinions of both teachers and leaders who chose to learn about formative instructional practices and to learn how implementation was affecting student achievement in classrooms. As study participants shared the positive attributes of Formative Instructional Practice

application, it is clear that there is a favorable impact that this professional learning has made for both the teachers and students involved. Teachers are able to effectively use the data provided to navigate instructional changes, and students are growing in their autonomy for learning. While there are still aspects of implementing this type of professional learning that need to be adjusted (e.g., timeline for carrying out the modules and providing additional content for assessment development practices), overall, the benefits of utilizing formative instructional practices in classrooms does lead to effective instructional practices, increased student achievement, and greater levels of student motivation than ever before.

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APPENDIX A

December 31, 2016

Dear <Principal's Name>,

As a fellow colleague and a doctoral student from Columbus State University, I would like to propose a particular research study which may be of interest to you. This study will look at the different ways Formative Instructional Practices (FIP) are used to help improve student achievement in elementary and high school language arts classes. The goal of the study is to gather perceptions for how this professional learning opportunity is making an impact on student learning in the district. Your school was selected as a possible candidate because: a) members of your leadership team participated in the FIP cohort professional learning sessions hosted by Dr. Laura Moak, and b) teachers in your school have generated Battelle for Kids login accounts and have completed at least one learning module.

You, your leadership team, and teachers working in the local school language arts department are invited to participate in this study. The research project is anticipated to continue for two months—February and March of 2017.

Data collected in this qualitative study will be acquired through:

- one voluntary leadership focus group, lasting 1 and ½ hours
- three voluntary teacher focus groups, lasting 1 and ½ hours
- voluntary teacher interviews, lasting 45 minutes and completed after hours
- voluntary submission of teacher classroom assessments

Through Depth of Knowledge (DOK) item identification, classroom assessments are requested to identify how Formative Instructional Practices (FIP) may be influencing teachers to include additional rigor on their assessments. During the three phases of data collection, no physical harm is expected for the study participants. In addition, all participation responses will be kept confidential.

Although you and your staff will not benefit directly from participating in this study, you will be apprised of the study findings as well as make a major contribution to the information known about how teachers and leaders perceive formative instructional practices affect student achievement. In the future, others in the district may benefit from the information gathered in this study regarding implementation of formative instructional practices in a school environment.

During the study, I and an assistant facilitator will be on site during all focus groups and individual interviews. Furthermore, an expert in DOK identification will also have access to teacher's classroom assessments through a secure process, ensuring participants confidentiality. While participants will not be paid for their participation in this study, beverages and light snacks/dinner will be provided to all focus group participants.

Please consider the inclusion of this study in your school and notify me of your decision by contacting me using the information in the header of this letter. If your school is permitted to participate in this study, separate consent letters for your leadership team and all members of your language arts department will be provided, which will include additional information for focus group sign-up and possible next steps. Should you have any questions, please feel free to call me at 404-386-8624 or email me at stjohnwacker@gmail.com.

Sincerely,
Courtney St. John



APPENDIX B

January 26, 2017

Dear Local School Leader,

I am a colleague and a doctoral student from Columbus State University in the department of Curriculum and Instruction, supervised by Dr. Margie Yates. My study will look at the different ways Formative Instructional Practices (FIP) are used to help improve student achievement in elementary and high school language arts classes including the goal of identifying how this professional learning opportunity is making an impact on student learning in the district.

You have been selected as a possible study participant because: a) members of your leadership team participated in the FIP cohort professional learning sessions hosted by Dr. Laura Moak, and b) teachers in your school have generated Battelle for Kids login accounts and have completed at least one learning module.

A step in the data collection process is to conduct focus groups. If you decide to participate in this study, your open and honest shared opinions will be used with the upmost consideration for confidentiality. The focus groups will take place in February/March 2017 and will only take one and half hours of your time. All focus groups will meet in the 200 building of the Instructional Support Center (ISC) and beverages and light snacks/dinner will be provided. It is important to state that there is no compensation for participation in this study.

One important element you should consider when thinking about participating in this study is if there are any risks for your participation. While all possible risks cannot be removed for any study, your participation should experience minimal to no risk and discomfort. Providing a comfortable setting should help with any discomfort you may experience.

Although you will not benefit directly from participating in this study, you will be apprised of the study findings as well as make a major contribution to the information known about how teachers and leaders perceive formative instructional practices affect student achievement. If requested, you are also able to review the transcript from the focus group session to ensure that your participation is a true reflection of your personal views. In the future, others in the district may benefit because of the information gathered in this study regarding implementation of formative instructional practices in a school environment.

In this study, your identity will be kept confidential. Your contributions will be documented using a pseudonym. Only the assistant facilitator, a third party transcriber, and I will hear your opinions and contributions. All hard copies of transcriptions for focus group sessions will be stored in a locked file cabinet, and electronic copies will be stored in an encrypted file on a lap-top computer that uses a secure password. A year after the study has concluded, all hard-copies will be shredded and electronic copies will be deleted.

Please consider participating in this study by attending the Leadership Focus Group held on Thursday, February 2 or Tuesday, March 7th beginning at 5 PM. Your participation is voluntary. You may withdraw from the study at any time, and your withdrawal will not harm you in any way. Should you have any questions, please feel free to call me at 404-386-8624 or email me at stjohnwacker@gmail.com. In addition, if you have questions about your rights as a research participant, you may contact Columbus State University Institutional Review Board at irb@columbusstate.edu.

If you decide to be a participant in this study, please bring this signed letter with you to the Leadership Focus Group. Thank you in advance for taking the time to consider helping me in my study.

Sincerely,

Courtney St. John

Courtney St. John

I have read this informed consent form. If I had any questions, they have been answered. By signing this form to the focus group session, I agree to participate in this research study.

Signature of Participant

Date

APPENDIX C

January 26, 2017

Dear Colleague,

I am a colleague and a doctoral student from Columbus State University in the department of Curriculum and Instruction, supervised by Dr. Margie Yates. My study will look at the different ways Formative Instructional Practices (FIP) are used to help improve student achievement in elementary and high school language arts classes including the goal of identifying how this professional learning opportunity is making an impact on student learning in the district.

You have been selected as a possible study participant because: a) you are an instructor of language arts in your school, and b) you have generated a FIP Battelle for Kids login account and have completed at least one learning module.

The first step in the data collection process is to conduct focus groups. If you decide to participate in this study, your open and honest shared opinions will be used with the highest consideration for confidentiality. The focus groups will take place in February/March 2017 and will only take one and half to two hours of your time. All focus groups will meet in the 200 building of the Instructional Support Center (ISC) and beverages and light snacks/dinner will be provided.

After the conclusion of focus group sessions, there will be an opportunity for focus group participants to participate in a one-on-one interview which will take approximately 45 minutes. Teachers who complete an interview will have an opportunity to win a \$100 gift card. Interview participants will have an opportunity to submit classroom assessments for Depth of Knowledge (DOK) analysis. An advantage of providing assessments for analysis is learning the overall DOK level percentages for the assessment (e.g., DOK 1 = 23%, DOK 2 = 45%, and DOK 3 = 22%).

One important element you should consider when thinking about participating in this study is if there are any risks for your participation. While all possible risks cannot be removed for any study, your participation should experience minimal to no risk and discomfort. Providing a comfortable setting should help with any discomfort you may experience.

Although you will not benefit directly from participating in this study, you will be apprised of the study findings as well as make a major contribution to the information known about how formative instructional practices affect student achievement. If requested, you are also able to review the transcript from the focus group session to ensure that your participation is a true reflection of your personal views. In the future, others in the district may benefit because of the information gathered in this study regarding implementation of formative

instructional practices in a school environment. It is important to state that there is no compensation for participation in this study.

In this study, your identity will be kept confidential. Your contributions will be documented using a pseudonym. Only the assistant facilitator, a third party transcriber, and I will hear your opinions and contributions. All hard copies of transcriptions for focus group sessions will be stored in a locked file cabinet, and electronic copies will be stored in an encrypted file on a lap-top computer that uses a secure password. A year after the study has concluded, all hard-copies will be shredded and electronic copies will be deleted.

Your participation is voluntary. You may withdraw from the study at any time, and your withdrawal will not harm you in any way.

Please consider participating in this study by using the link below to select the two most convenient focus group meetings according to your calendar. If you decide to be a participant in this study, please bring this signed letter with you to the Teacher Focus Group.

Should you have any questions, please feel free to call me at 404-386-8624 or email me at stjohnwacker@gmail.com. In addition, if you have questions about your rights as a research participant, you may contact Columbus State University Institutional Review Board at irb@columbusstate.edu.

Thank you in advance for taking the time to consider helping me in my study.

Sincerely,

Courtney St. John

Courtney St. John

Teacher Focus Group scheduling link: <https://goo.gl/forms/B1dnxaFLW3hMmXpi2>

I have read this informed consent form. If I had any questions, they have been answered. By signing this form to the focus group session, I agree to participate in this research study.

Signature of Participant

Date

APPENDIX D

Focus Group and Interview Reminder Email

Dear <Focus group participant name or Interview participant name>

This is an email reminder that our <focus group or interview> will be taking place tomorrow. I look forward to meeting you and discussing your opinions, perceptions, and thoughts regarding the use of Formative Instructional Practice (FIP) to help improve student achievement in elementary and high school language arts classes.

- <session date and time>
- <session location>

Please remember to bring your signed consent letter with you. For your convenience, a copy of the consent letter is attached. Thank you.

Sincerely,

Courtney St. John

APPENDIX E

Teacher On-line Scheduling Form

This form was used to provide flexibility for teachers as they select a session.

Welcome to the Focus Group Scheduler

Thank you for taking the time out of your day to participate in a focus group session. By completing the form below, you are providing your consent to participate in this research study. Your participation in this research study is voluntary and you may withdraw from this study at any time.

All focus groups will take place in Suite 2.230 at the ISC. Please follow the signs upon entering Building 200. Light snacks/dinner and beverages will be served.

*** Required**

Please select the school where you work. *

☐ [] Elementary School
☐ [] Elementary
☐ [] Elementary
☐ [] Elementary

☐ [] Elementary
☐ [] Elementary
☐ [] Elementary
☐ [] Elementary
☐ [] Elementary
☐ [] Elementary
☐ [] High School
☐ [] High School

Please select your first choice for attending a focus group session *

☐ Thursday, March 9 at 5:00 PM
☐ Tuesday, March 14 at 5:00 PM
☐ Wednesday, March 15 at 5:00 PM

What would be the best way to receive a reminder to attend the focus group session? *

☐ Email
☐ Text message

NEXT Page 1 of 2

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Google Forms

This portion of the form was used to provide a reminder for their selected session.

The screenshot shows a Google Form titled "Contact Information" with a dark blue header. The form is set against a light beige background. The text inside the form reads: "We appreciate your effort and time, please fill in the following to receive meeting reminders. Your contact information will be kept confidential." Below this, there are three required text input fields: "Name ~ enter your name *", "Email ~ enter your email address *", and "Text message ~ enter your cell number". Each field has a placeholder text "Your answer". At the bottom of the form, there are two buttons: a grey "BACK" button and a blue "SUBMIT" button. To the right of the "SUBMIT" button is a green progress bar and the text "Page 2 of 2". At the very bottom, a small note states "Never submit passwords through Google Forms."

Contact Information

We appreciate your effort and time, please fill in the following to receive meeting reminders.
Your contact information will be kept confidential.

Name ~ enter your name *

Your answer

Email ~ enter your email address *

Your answer

Text message ~ enter your cell number

Your answer

[BACK](#) [SUBMIT](#) Page 2 of 2

Never submit passwords through Google Forms.

APPENDIX F

Focus Group Protocol

Focus Group Discussion Guide

Consent Process

Consent to agree to become a focus group participant was acquired when participants signed their consent letter. In addition, participants brought their signed consent letter to the focus group session. Below is a summary of the information provided to participants in their consent letter.

- *The purpose of the study is to identify how the different ways Formative Instructional Practices (FIP) are used in the district to help improve student achievement including the goal of identifying how this professional learning opportunity is making an impact on student learning in the district.*
- *The criteria for select in the focus group:*
 - *Leaders –*
 - *members of the school’s leadership team participated in the FIP cohort professional learning sessions*
 - *teachers in the school have generated Battelle for Kids login accounts and have completed at least one learning module*
 - *Teachers –*
 - *an instructor of language arts in your school*
 - *a FIP Battelle for Kids login account and have completed at least one learning module*
- *The information provided during the focus group session will be completing confidential.*
- *Potential risks and benefits were disclosed in the consent letter.*
- *Participants have the right to withdraw from the study at any time, and their withdrawal would be without any penalty.*
- *Focus groups will take place in January 2017 (200 building of the Instructional Support Center) and will only take one and half to two hours of their time.*
- *Beverages and light snacks/dinner will be provided.*
- *Transcripts of the focus group will be available upon request.*

Teacher participants were given a choice of teacher focus groups to attend. Selection was made using an on-line scheduling link included in the teacher consent letter.

Meeting Elements

1. Welcome
 - a. Introductions of myself and the co-facilitator
 - b. Ensure that everyone has signed in

- c. Participants will be asked to briefly introduce themselves (what they teach/what are their major responsibilities, how long they have been teaching/how long have you been an educator, a fun fact about them)

2. Review

- a. Purpose of the study
- b. What will be done with the information provided to the researcher
- c. Why it is important that they participate in the discussion
- d. If a teacher or a leader is present on the wrong day, politely excuse the participant

3. Explain the process for the evening

- a. Provide positives and negatives in the discussion, which will allow the researcher to learn from them
- b. Not trying to achieve consensus – just gathering information
- c. Explain the three different ways data will be obtained in this study: focus groups, individual interviews, and document analysis

4. Logistics

- a. Remind participants about the length of the focus group
- b. Identify where a bathroom can be found
- c. Participants should feel free to help themselves to refreshments

5. Ground rules: ask the group to brainstorm the meetings ground rules and write them on the white board in the conference room. Ensure that the following are part of the group's ground rules.

- a. Everyone should participate
- b. It is understood that all information shared during the evening will be confidential
- c. Please do not cross talk or have side bar conversations
- d. Turn off or place your cell phone on vibrate
- e. Enjoy the evening

6. Turn on the digital recorder

7. Ask the group if there are any questions before we begin

8. Begin the group introductions

- a. (T) What do you teach? or (L) What are your major responsibilities?
- b. (T) How long have you been teaching? or (L) How long have you been an educator?

- c. A fun fact about yourself

As the discussion progresses, be sure to allow ample time for participants to think and answer the questions. DO NOT rush participants and move too quickly. Use probing questions when I feel that the group is beginning to hear repetitive information.

Focus Group Questions:

1. How was Formative Instructional Practices (FIP) training implemented in your school?
2. One of the things that we are especially interested in is the use of Formative Instructional Practices (FIP) in the classroom. What can you tell us about that?
3. What motivated you to learn more about Formative Instructional Practices?
4. What kinds of things have you changed in the school/classroom because of your training on FIP?
5. How has the implementation of FIP impacted student learning in your school/classroom?
6. One aspect in the research about formative assessment is that there is disconnect between student course performance and student performance on standardized assessment. What are your observations?
7. How has the implementation of FIP impacted student motivation in your school/classroom?
8. How has the incorporation of FIP practices in your classroom differed from what you expected?
9. What additional training is needed for FIP implementation?
10. Will you continue to use FIP in your school/classroom? Why or why not?
11. Is there anything else you would like to say about FIP?

Questions to advance the discussion:

- One thing I've heard several people mention is _____. I wonder what the rest of you have to say about that (Morgan, 1997, p 51)?
- One thing that I'm surprised no one has mentioned is _____. Does it matter or not (Morgan, 1997, p 51)?

- I recall that some of you mentioned something a little different earlier, and I wonder how things like _____ fit into the picture (Morgan, 1997, p 51). Could any of you explain?
- What do you mean when you say _____? Would you give us an example of what you are talking about so we can better understand (Kleiber, 2004, p 101)?

Probes for discussion:

- Modules: deconstructing standards, collecting evidence of learning, providing feedback, assessment development
- Student motivation
- Quality professional development
- Changing instructional practices
- Resistance to change

If you have additional information that you did not get to say in the focus group, please feel free to share it now.

This concludes our focus group session. Thank you so much for the opinions, information, and insights you provided this evening. If you would like to participate in an interview session and have a chance to win a \$100 gift card, please see me after the meeting to sign up for an interview to be conducted in your school.

- *The information provided during the interview session will be completely confidential.*
- *Interviews will take place in February 2017 (classroom of the individual teacher) and will only take 45 minutes of their time.*
- *Interview questions will be provided to interview participants, allowing for the participant to organize their thoughts*
- *Transcripts of the interviews will be available to interview participants.*

Materials and Supplies

- ☐ Signs to guide participants to the meeting room
- ☐ Sign-in sheet
- ☐ Extra letters of consent for participants that do not bring their letters
- ☐ Pencils and pens for each participant
- ☐ Focus Group Discussion guide for facilitator and assistant facilitator
- ☐ Sign for the classroom door stating that a focus group is taking place
- ☐ Digital Recording device
- ☐ Extra batteries for recorder
- ☐ Back-up recording electronic device
- ☐ Power cord for back-up recording device
- ☐ Composition book for taking field notes
- ☐ Refreshments
 - o Drinks (Ice)
 - o Salad with dressing

- o Pizza
- o Plates, napkins, and forks
- o Brownies

APPENDIX G

Focus Group Discussion Sign-In

THE USE OF FORMATIVE INSTRUCTIONAL PRACTICES

TO IMPROVE STUDENT PERFORMANCE

Focus Group Date: _____

School Code	Job Position <i>(Ex: Teacher or Leader)</i>	Pseudonym	Years in Education/Teaching	Courses Taught <i>(Ex: 9th Lit & Comp)</i>	Gender <i>(Ex: Male or Female)</i>
Total N =					F = (%) M = (%)

APPENDIX H

Interview Protocol

Interview Guide

Interview Participant Name:		Date of Interview	
Start Time:		Classroom Assessment	
End Time:		_____ Yes	_____ No

Consent Process

Consent to agree to become an interview participant was acquired when participants signed up for an interview appointment after the conclusion for the focus group session.

- *The purpose of the study is to identify how the different ways Formative Instructional Practices (FIP) are used in the district to help improve student achievement including the goal of identifying how this professional learning opportunity is making an impact on student learning in the district.*
- *The information provided during the interview session will be completely confidential.*
- *Interviews will take place in February 2017 (classroom of the individual teacher) and will only take 45 minutes of their time.*
- *Transcripts of the interviews will be available upon request.*

Interview Elements

1. Thank you provided
2. Review
 - a. Purpose of the study
 - b. What will be done with the information provided to the researcher
 - c. Why it is important that the interview take place
3. Explain the process for the afternoon
 - a. Provide positives and negatives in the discussion, which will allow the researcher to learn from them
 - b. Explain the three different ways data will be obtained in this study: focus groups, individual interviews, and document analysis

4. Logistics
 - a. Remind participants about the length of the interview
 - b. Arrange seating so that the interviewee and the interviewer are positioned at 90° angle

5. Turn on the digital recorder

6. Ask the interviewee if there are any questions before we begin

7. Begin the interview

As the discussion progresses, be sure to allow ample time for interviewee to think and answer the questions. DO NOT rush the interviewee and move too quickly. Use probing questions when I feel that the conversation is beginning to repeat information.

Interview Questions:

1. What are your thoughts on Formative Instructional Practices (FIP)?
2. Which FIP module have you really gained the most information to enhance your classroom instruction and why?
3. How comfortable are you in your abilities to deconstruct standards and develop clear learning targets? Incorporate strengths and challenges in your response.
4. How comfortable are you in your ability to collecting evidence of student learning and analyze the evidence? Incorporate strengths and challenges in your response.
5. How comfortable are you in your ability to providing effective student feedback? Incorporate strengths and challenges in your response.
6. How has your implementation of FIP changed how you develop classroom assessments?
 - a. As a result of implementing FIP, have you observed that the level of rigor or cognitive demand has changed on your classroom assessments?
7. Has your participation in FIP professional learning changed your perception of district assessments? How?
8. What have been the challenges of implementing FIP?

- a. If you were designing the implementation plan, what would you change about the way you experienced this professional learning?

Probes for discussion:

- Modules: deconstructing standards, collecting evidence of learning, providing feedback, assessment development
- Changing classroom assessments
- District assessments
- Student motivation
- Quality professional development

If you have additional information that you did not get to say in the interview, please feel free to share it now.

This concludes our interview session. Thank you so much for the opinions, information, and insights you provided this afternoon. As the participant is completing the drawing ticket for a \$100 gift card ask: would like to participate in a document analysis portion of this study? Explain how the assessment will be reviewed for item rigor level and checked by an assessment expert. All item content will be the sole property of the assessment developer. If so, please use this envelope to provide the researcher with any classroom assessments used during the school year. If requested, a Depth of Knowledge (DOK) analysis will be provided to you for every assessment placed in the envelope.

Materials and Supplies

- ☐ Interview guide for interviewer
- ☐ Digital Recording device
- ☐ Extra batteries for recorder
- ☐ Back-up recording electronic device
- ☐ Power cord for back-up recording device
- ☐ Composition book for taking field notes
- ☐ Drawing ticket
- ☐ Envelope for classroom assessments marked with a return address and teacher pseudonym
- ☐ Sign for the classroom door stating that an interview is taking place

APPENDIX I

Sample Interview Participant Drawing Tickets for \$100 Gift card

FIP Study Drawing Ticket \$100 Gift Card <i>Drawing to be held after all interviews have been conducted</i>	
Drawing Ticket Number: 00100	Drawing Ticket Number: 00100 Good Luck! <i>The winner will be contacted and the \$100 gift card will be sent via courier.</i>
Name:	
Email Address:	
Contact Phone Number:	

FIP Study Drawing Ticket \$100 Gift Card <i>Drawing to be held after all interviews have been conducted</i>	
Drawing Ticket Number: 00101	Drawing Ticket Number: 00101 Good Luck! <i>The winner will be contacted and the \$100 gift card will be sent via courier.</i>
Name:	
Email Address:	
Contact Phone Number:	

FIP Study Drawing Ticket \$100 Gift Card <i>Drawing to be held after all interviews have been conducted</i>	
Drawing Ticket Number: 00102	Drawing Ticket Number: 00102 Good Luck! <i>The winner will be contacted and</i>
Name:	
Email Address:	

Contact Phone Number:

the \$100 gift card will be sent via courier.

APPENDIX J

Sample Classroom Assessment and Member Checking Documentation

5th Grade: Unit 3 Part 2- Fractions

DOK 1: 2 = 13 %

DOK 2: 13 = 81 %

DOK 3: 1 = 6 %

Name: _____ Date: _____

1. (23.NF.7_b & 24.NF.7_c) Stella is making hot chocolate for her friends. She has six cups of hot chocolate powder and will need $\frac{1}{5}$ cup of powder for each serving. How many servings will Stella be able to make?

- a. $\frac{1}{30}$ c. 6
b. $6\frac{1}{5}$ d. 30

② create an equation and solve

2. (22.NF.7_a & 24.NF.7_c) There is $\frac{1}{2}$ of a pie left. Four friends are going to share the rest of the pie evenly. How much of the pie will each friend get?

- A. $\frac{1}{6}$ pie B. $\frac{1}{8}$ pie C. $\frac{1}{4}$ pie

② create an equation and solve

3. (22.NF.7_a) Solve the problem. Show your work.

$$\frac{1}{2} \div 3$$

① routine math problem

4. (23.NF.7_b)

Use the number line to show the solution to $2 \div \frac{1}{3}$

① routine math problem



5. (23.NF.7_b & 24.NF.7_c) How many pieces of wood in $\frac{1}{8}$ ft. in length, can be cut from a 5 ft. board?

a. $\frac{1}{40}$ of a piece

② create an equation

5th Grade: Unit 3 Part 2- Fractions

6. (23.NF.7_b & 24.NF.7_c) Flynn is running in a race that is 4 miles long. A marker is placed every $\frac{1}{4}$ mile from the beginning of the race until the end. What is the total number of distance markers on the trail?

a. $4\frac{1}{8}$ b. 8 c. 12 d. 16

② create a model and count

7. (22.NF.7_a & 24.NF.7_c) Two scouts, Ronald and Jacob, are going to practice tying knots. They have one piece of rope that is one-third meter long. They are going to cut the rope into 2 parts. How long will each part be? Show your work.

② create an equation and solve

8. (22.NF.7_a & 24.NF.7_c) Mom made a pizza. There is only $\frac{1}{4}$ of a pizza left. Mom and her friend, Sally, are going to share the remaining pizza evenly. Which number sentence would show how much of the pizza will they each get?

a. $\frac{1}{4} \div \frac{1}{2} = 2$

b. $\frac{1}{4} \div 2 = \frac{1}{8}$

c. $\frac{1}{4} \times 2 = \frac{1}{2}$

d. $2 \div \frac{1}{4} = 8$

② create an equation

9. (23.NF.7_b & 24.NF.7_c) One-half of all of the pictures Kyra posts to Instagram are of her cats. She takes an equal number of pictures of all 3 of her cats: Fluffy, Muffy and Bob. Write an equation to find what fraction of all of Kyra's Instagram posts are of Bob and solve.

② create an equation

- 10) If Kyra has posted 360 pictures on her Instagram, how many pictures are of Bob?

② modify equation and solve

5th Grade: Unit 3 Part 2- Fractions

- 11) 10. (23.NF.7_b & 24.NF.7_c) The bucket holds 12 liters of water. If we use a scoop that holds one-fourth of a liter, how many scoops will we need in order to fill the entire bucket?

- a. $\frac{1}{48}$ of a scoop
- b. 3 scoops
- c. 24 scoops
- d. 48 scoops

② Create an equation and solve

- 12) 11. (23.NF.7_b) Leah knows that multiplication and division are related, but gets confused when working with fractions. She solved the problem $4 \div \frac{1}{5} = 20$ and created the multiplication sentence $20 \times \frac{1}{5} = 4$, but isn't sure how to explain why that works. Use the space below to help Leah understand the relationship.

② explaining a mathematical relationship

- 13) 12. (22.NF.7_A) Write a story problem that can be solved with $\frac{1}{2} \div 8$.

③ solve the equation
create a story problem

5th Grade: Unit 3 Part 2- Fractions

13. (22.NF.7_a, 23.NF.7_b & 24.NF.7_c) The students at Davison Elementary School have a running club that meets each week to run. The students are broken up into teams.

Part A

14) Lindsay and Sebastian are trying to determine how far each of the four runners on their team will have to run if the race is $\frac{1}{3}$ of a mile. Circle the person that set their problem up correctly and then solve.

Lindsay	Sebastian
$\frac{1}{3} \div 4$	$4 \div \frac{1}{3}$
	② create an equation and solve

Part B

15) Use the information from Part A to explain the error in the incorrect expression and why it does not represent the problem being asked.

② justify an ^{incorrect} answer

Part C

16) The running club is preparing for a 4-mile race. Each runner will be responsible for $\frac{1}{16}$ of a mile. How many students will be needed to run the race? Show your mathematical thinking.

② create an equation and solve

5th Grade Fractions - Part 1		
Q#	DOK	Rev. DOK
1	1	2
2	1	1
3	1	1
4	2	2
5	2	2
6	2	3
7	2	2
8	2	2
9	2	2
10	2	2
11	2	2
12	2	2
13	2	2
14	2	2
15	2	2
16	2	2
17	2	2
18	2	2
19	2	2
20	2	2
21	2	2
22	2	2

5th Grade Fractions - Part 2		
Q#	DOK	Rev. DOK
1	2	
2	2	
3	1	
4	1	
5	2	
6	2	
7	2	
8	2	
9	2	
10	2	
11	2	
12	2	
13	3	
14	2	
15	2	
16	2	

Sophomore LA		
Q#	DOK	Rev. DOK
1	2	2
2	1	2
3	2	2
4	2	2
5	1	2
6	2	2
7	1	2
8	1	1
9	2	3
10	1	2
11	1	2
12	1	2
13	2	2
14	1	2
15	1	2
16	2	2
17	1	2
18	2	2
19	2	3
20	1	2
21	1	2
22	2	2
23	1	2
24	3	3

Junior LA		
Q#	DOK	Rev. DOK
1	1	1
2	2	2
3	1	1
4	2	3
5	2	2
6	1	2
7	2	2
8	1	2
9	1	2
10	1	2
11	1	2
12	2	2
13	2	2
14	2	2
15	1	1
16	2	2
17	2	2
18	1	2
19	2	2
20	1	2
21	2	2
22	2	2
23	2	2
24	1	2
25	1	2
26	2	2
27	2	3
28	1	2
29	1	2
30	2	2
31	2	2
32	2	2

Summary

	DOK 1%	DOK 2%	DOK 3%	Item Total
Test 1	9%	86%	5%	22
Test 2	13%	81%	6%	16
Test 3	4%	83%	13%	24
Test 4	9%	84%	6%	32